THE SPECTRUM SHOW
Magazine

INFINITE LOOP
THE ZX MICRODRIVE STORY

GOOD OR BAD?
WHAT MAKES A GOOD GAME?

PLUS:
TZX DUINO
CP/M UNRAVELLED
FESTIVE BIT - SORT OF!

Includes material not in the show

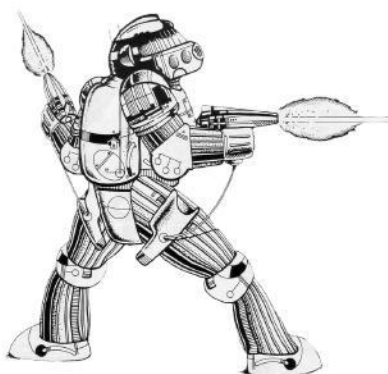NEWS FLASHBACK

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EDITORIAL

Welcome to issue 27 of The Spectrum Show Magazine. Thank you for downloading and reading.

The build up to Christmas was always a busy period in the home micro world. Every company vying for the top spot, getting their adverts booked and hoping, or in some cases paying, to get a good position. The optimum spots were the back cover or the inside front cover. Smaller companies had to settle for smaller adverts, but at the same time trying different techniques to lure buyers in.

Some made absurd claims, especially in the early days, with many games being advertised as "near arcade perfect", "super smooth machine code graphics" or "the best version of the arcade game". As history tells us, this is not always the complete truth.

There was no internet, there was no easy way to access bulletin board systems, people had to rely on the magazines, who also did not always tell the truth, and it was even suggested that many "adjusted" reviews in exchange for advertising contracts.

It was a hectic time for publishers on a deadline. The games they had been advertising had to be ready in time for testing, duplication and distribution. They had to work and possibly because they were initially simplistic, most seemed to work OK. As the games got more complex, a few bugged versions slipped out, the most famous being the bug in Jet Set Willy. There were other titles that slipped out with bugs of varying levels of seriousness. Some made the game impossible to complete (Subterranean Stryker), some crashed the machine if certain things happened like a score of

over 65,536, and some just had graphic glitches (Billy Bong).

Yes, the months leading up to the festive season in the 80's were the best time to own a Spectrum. Loads of new games, loads of hype and loads of family members giving you money.

The last few months before Christmas have also been hectic for myself. I had numerous projects to complete including the shows of course, and this magazine. I also had many long video shoots to complete for the shows and with the other things going on in my 'real' life, this proved very hard. A typical long feature shoot for hardware usually takes me about two days from setting up to packing away (excluding editing). A recent feature on a word processor for episode 91 took over 2 weeks to complete. This was due to having to break it down into many two or three hour segments.

If all goes well though, things may be improving shortly.. More soon.

Although this is not a specific Christmas issue, I am aiming to get it published by the end of December. Whether that happens remains to be seen. There is not enough festive material to fill an issue anyway, but at least I have added a small festive section towards the end of the magazine.

Skip forward a few weeks after typing all of the above, and it seems this issue is a bumper issue, as they used to call them back in the day. A few more festive features and even a game review or two, although one of them is my game!

My games creation output has been somewhat stumped recently, and it is something that I miss. I have many un-finished ideas waiting to get completed and at one stage had a four game compilation, provisionally titled 'Not Good Enough'' ready to go apart from one game that needed tweaking.

If time allows, I hope to get that one out of the door.

Thank You

This issue includes a brilliant article written by Tony Smith and originally published on The Register (www.theregister.co.uk). I would like to thank the editor of that site, Chris Williams, for allowing me to use it. The Infinite Loop can be found on page 12 and it's a very interesting read.

George Beckett continues to support the magazine by providing excellent articles, his last series on programming languages was good to read. This issue he looks at something new, and something many Plus 3 owners had, but rarely used, if at all.

Festive greetings to all readers.

PLUS 3 PRICE DROP

After months of complaints, Sinclair finally gave in and lowered the price of the new Plus 3 machine.

Many industry figures, companies and the public raised concerns that the new machine would not sell at the original launch price of £249 because it was in direct competition with the newer 16-bit micros. The Sinclair machine would just not compete on any level with 16-bit machines having more power, better graphics, better sound and disk storage as standard.

Sinclair have now though done a U-turn and dropped the price to a more affordable £199 just before release. Although not cheap, it does make the machine more attractive to both new buyers and existing users looking to upgrade.

BARBARIAN BANNED

Palace software's hit game, Barbarian, has been banned in Germany because of its realism. The game's 8bit graphics depict sword fighting and a decapitation scene, and it is said this kind of imagery would affect German youth and incite violence. There was no mention of the half-naked lady on the cover though. This, it seems, is fine.

US GOLD SCORE DEAL

US Gold have signed a deal with TSR, the producers of the popular board game, Dungeons and Dragons.

US Gold hope to produce as many as ten titles from the licence including not only adventure style games, but also arcade based games.

The deal with Strategic Simulations Incorporated, who own the licence for the franchise, is claimed to be, by US Gold, the "Software Licence of the decade".

ULTIMATE BUDGET

Mastertronic have acquired the rights to rerelease early Ultimate Play The Game titles on their Ricochet label. The games included are Jetpac, Alien 8, Knight Lore and Nightshade.

There seems to be a bit of wide scattering there of very early released games and later ones, but for 1.99, you can't go wrong if you have never played any of these games before.

PCW SOLD

Popular Computing Weekly, the excellent computer magazine has been sold to Focus Magazines in the hope of relaunching the publication and making it more attractive.

The original publisher, Sunshine, were suffering from poor sales, and even their own re-launch failed to make any improvements despite the magazine being a firm favourite.

Focus say they are not planning on any major changes, and they are happy to at last have a weekly in their catalogue.

IN THE MOVIES

US Gold are preparing to release three games that will let you take the part of the most famous stars in Hollywood, and make your own film.

Marylin Monroe, James Dean and Charlie Chaplin will each get their own game, with the first one named "Starring Charlie Chaplin".

You will get to set the script, direct the action and take control of the star in the hope of making a movie masterpiece.

ASP SOFTWARE

A STEP BEYOND THE ARCADE...

Demon Knight · The Valley · Strategy 1—Invasion · Strategy 2—Bismark
White Barrows · Detective · Cells & Serpents · Stockmarket
Conquering Everest · Cloneit/Renumber · Gallery of Death · Planetfall

HORACE & THE ROBOTS

Reptilia Design 2018

This new game, released in 2018 by Steve Snake is, probably the best Berzerk clone on the Spectrum.

It was a little too late for my shootout a while back, but this would have certainly taken the prize. Everything about the game oozes quality, and the only thing, at least for me, was the inclusion of Horace. A character I do not particularly like.

I can forgive the use of the Horace sprite though, simply because the game is so good.

The movement is spot on and things move at the right pace to make the game challenging. Not too fast nor slow, and you always get a chance to escape Evil Otto when he makes an appearance.

Using the four direction keys (QOAP) together will allow you to fire diagonally too, something missing from many conversions of this classic arcade shooter.

The sound effects are brilliant and the little Spectrum (or in this case the larger models, as you'll get better sounds on 128k machines) even gives us speech if you use a Currah speech unit. The unit wasn't the best device for speech, but it does get us a little closer to the arcade version. It really does feel like you are listening to the arcade cab.

The graphics match the arcade game, so they are not super detailed, but that's fine for this clone, the only things to change are Horace and Evil Otto. Difficulty is, I would say, slightly harder than the arcade so it does allow you to enjoy the game more, and after all, this idea is fun and not to rob you of your dinner money.

This is a great version, and the nearest you are going to get on the Speccy.

A great game. Definitely worth downloading.

SPORTS HERO

Melbourne House 1984

This is another attempt to bring the arcade game Track N Field to the Spectrum. That old joystick destroying favourite of the arcades has seen a few attempts at conversion, the most famous of course being Daley Thompson's Decathlon. That game had all the events, this one though, is limited to just four: 100 Metres, Long Jump, 110 Metre hurdles and Pole vault.

The reason for a cut down version is unclear, but if I were cynical, I would say the developer had problems getting the character animations in. Athletic games have to cover a wide variety of animations, running, jumping, vaulting, hurdles, javelin, discus, etc..

The usual control method is used, the old keyboard and joystick killer combination of left, right and fire. This is used to simulate the movement of the character's legs as they run down the track with the fire button used to jump or throw.

The game has several levels starting with street runner, the difference between them is the background graphics and the times or scores you have to beat to qualify or win events.

The first event is the 100 metres. You approach the line and with a staggeringly disappointing 'pop!' sound, the race is on. You stab wildly at the left and right keys, half wanting to win and half not wanting to break your keyboard or joystick. Your little man runs down the track on his own with only the clock to beat, and when complete, there is silence.

The hurdles comes next and this involves the use of the fire button to time your jumps and you continually hit the left and right keys. Once you get to know the best location to jump, this event is fairly easy but you do spend a lot of time hitting the hurdles.

You have three attempts at gaining a good time, but even if you fail, you move on to the next event. This means there is no real competition, no real challenge and you can play all the events without really trying.

The Long Jump is the next event and again it's left and right to run and a stab of the jump key when you think it is safe to do so. This will send your man into the air with some basic animation.

The last event is the pole vault. This event differs slightly as there is the usual running and jumping mechanic, but once you hit the jump key, the view changes, accompanied by a rather irritating sound effect. Instead of just hitting the jump key you have to hold it down. The view switches to your man gaining height and you have to release the key when you think he can't go any higher. This is tricky to judge.

If you gain good scores and win the events, the crowd don't go crazy, they go home. Absolute silence again, which is a bit annoying having spent ages trying to win. Even when you are in Olympic mode, the hardest level, the crowd seem to be all asleep.

The limitation of four events coupled with the poor sound makes this game a low scorer. The graphics are OK, but there are much better Track N Field clones available.

Hard Drivin'

Domark 1989

Originally released into the arcades in 1989 by Atari, Hard Drivin is a 3D stunt racing game where the player controls and races a car across various courses with jumps, loops and banks. This made the game different from the average arcade racer, and was popular with players.

Converting this to the Spectrum would be a challenge and Domark decided to have a go with not-so-good results.

I was looking forward to this game as I really enjoyed Stunt Car Racer on the 16bit machines, and I wanted to see how the game played and felt. I have to say, as soon as the race started, I was very disappointed. The screen update was terribly slow to the extent that the game was almost unplayable. The controls seemed to lag and your car just reacted to key presses seconds after they were pressed. This meant that most of the time the car just span off the track uncontrollably. It was like driving on ice!

Occasionally I got it on the track and heading in the right direction, but once a turn came up, I was spinning away and off the track. The frame rate made this worse, it was like the game was caching all the commands and then playing them back 3 seconds later. Trying to correct a spin was impossible.

The other cars on the road, although you could see them approaching, were impossible to avoid unless you went off road and sometimes you could get hit by cars behind you!

The graphics are a step too far for the Spectrum I think. Shaded 3D is a tough ask for our little micro and it struggles.

When you crash, which is all of the time, you do get an instant replay which at first is good, but soon gets boring due to the amount of crashes you have. Some modern games, and even older titles such as Indianapolis 500 were great to watch the crashes back, and you often tried to make them spectacular just to see the carnage played back. But on the Spectrum it is just a stuttering mess that is no fun at all.

Sound is used well though, with a nice engine sound, and I think that's the best compliment I can pay this game. It is very much let down by the frame rate and graphics. It's almost as though the Spectrum is struggling to keep up with the graphics and forgets to check the controls.

After about 30 minutes of crashing I finally managed a full course of the slow circuit, even managing the loop, but lost control soon after. Even when you think you are used to the controls, the game comes back for revenge.

I didn't like this game. I found it unplayable because of the faults above. I can see the challenge but it's the wrong one. It should not be the challenge of using the controls, which sadly this game is.

A high-profile game that for me doesn't deliver.

3D DEATHCHASE

Micromega 1983

I don't think this game needs much intro-duction, it is one of the all-time classic games, and it all fits into 16k of memory.

The game gives a mixed message in that the cover displays some kind of futuristic hover bike, while the loading screen shows a normal motorcycle. The loading screen between the normal and budget version also differs, just to keep you guessing.

Many people really wanted this game to be a re-creation of the speeder bike scene in Return of The Jedi, and to some extent that's what we get. It was the nearest thing on a Spectrum to that iconic scene from the movie.

The story goes that it's the year 2501 and the continent is ruled by mighty warlords. You are an elite mercenary, riding the big bikes, and it is your job to monitor the forest for any evil bikers. You can fire at them, but only at top speed and only when they are in range.

The game has you hurtling through the trees, dodging left and right as they rapidly approach, using a brilliant 3D effect. Once you get the evil bikers in your sights you can destroy them.

There are two riders per level and they often split up, winding their own way through the forest. They will, though, soon come back into view and the chase starts again. The levels are split into night and day, alternating for each stage. Complete the level and it gets harder as the forest gets denser with more and more trees to avoid, until this become the main part of the game.
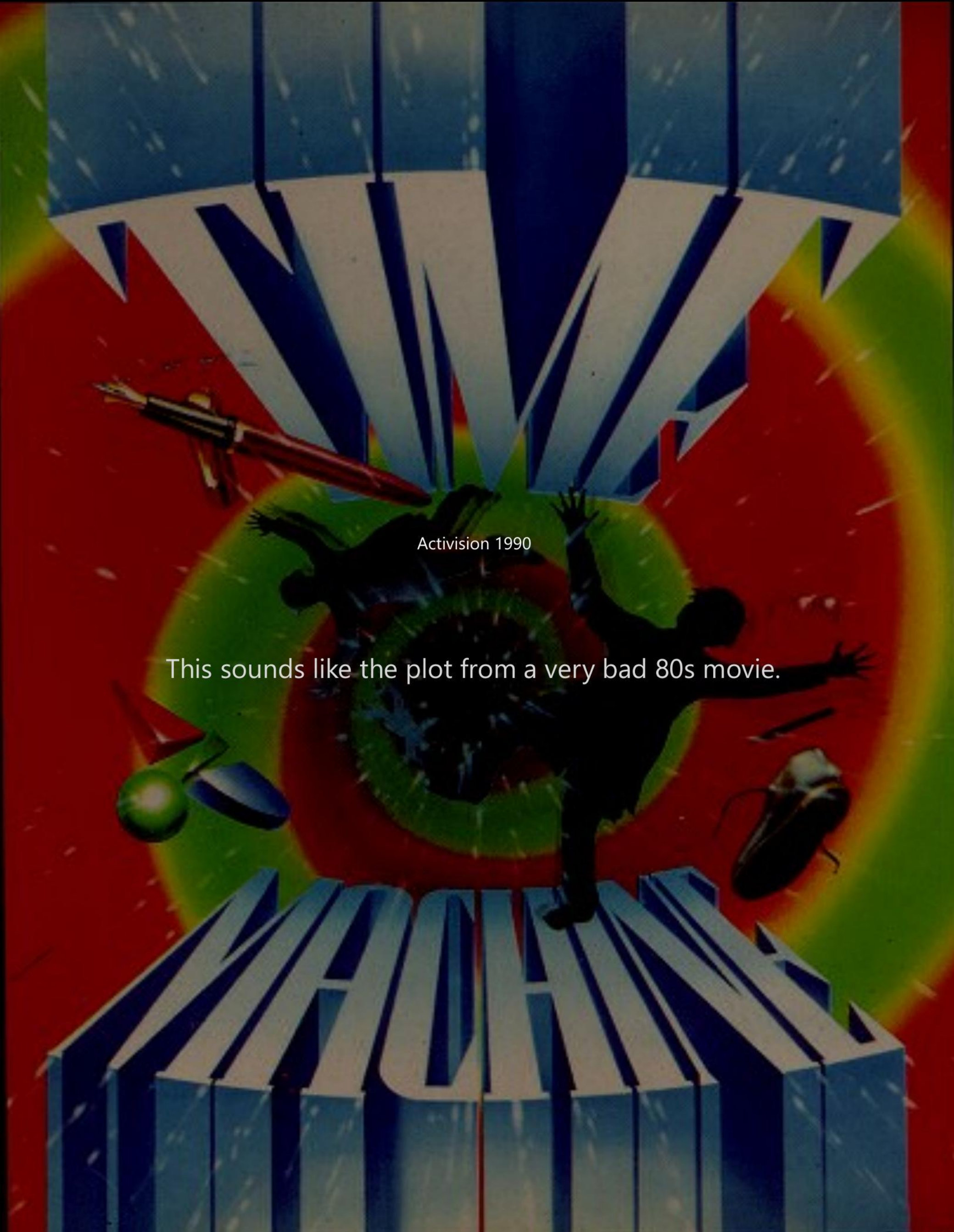
There are tanks and helicopters to destroy as well, appearing randomly in the distance, and you can shoot these for extra points. Once you get past level 3 or 4 though, all your concentration is on not hitting the trees, even the enemy riders take second place to this.

The game has you bobbing your head from side to side as the trees whizz past. And it certainly gets you involved.

This is a fantastic game.. a true classic...

Activision 1990

This sounds like the plot from a very bad 80s movie.

Time Machine is a very odd game! Let me explain, if I can.

It's an arcade adventure. You control Professor Potts who is messing about with his time machine when a terrorist attack sends him back to the prehistoric age and breaks the machine. Your only hope is to manipulate history and try to get back and stop the attack.

There are five zones, each with objects that may be needed in other zones, but only the first, the prehistoric, is open to start with. This means you have to work out the puzzles to open up the next zone until you finally reach the end. You also have to work out which object from which zone is needed in the previous or future zone to complete a puzzle.

When I first loaded this up I spent ages wondering about. Falling down holes, being hit on the head by fiery boulders and sinking into the river. Obviously our professor never learnt how to swim.

He did however learn how to control pterodactyls as he can be picked up and flown around the screens that make up each zone. Handy to get quickly from one screen to another or to avoid swamps and rivers, but tricky to control.

Back to the game, and reading some hints was the only way to proceed.

You have four pods and these can be placed in any screen and be used to teleport around. Essential for avoiding swamps and rivers and easier to use than pterodactyls. Placing one near a cave. and the other in a coconut grove is the first thing to do, although this swamp is a real life-taker, which is a real pain.

You also have a stun gun and the next task is to go to the grove, wait for an animal to appear, stun them, walk up to them so their icon appears top left and then teleport to the cave. Here you walk in and they follow. Do this twice.

The idea is you are helping the early humans survive!

Next you need to go back to those three boulders, pick them up and then drop them in the holes. This is tricky, one wrong move and you fall in and die.

Getting the boulders just in the right place takes time and the only way to tell if you got it right, is to wait for them to jump up, which can take more than ten seconds. These holes are actually geezers and you are trying to block them. Once all three are blocked the next level opens up you can tell this by the level indicator top centre which turns green for the next level up. At this point I have very mixed feeling about the game.

If you have a lot of time and patience and have the stamina to try every possible thing on every screen, then you'll enjoy this.

The graphics are great but controlling Professor Potts can be problematic. There is no sound either which is odd, as the reviews mention music and spot effects. I tried several download versions and all were silent. I even loaded my original and still got no sound.

The rest of the puzzles follow the same pattern, which is sort of logical, but still requires a lot of trial and error.

This is good looking game that will take a long time to complete if you don't use a walkthrough. Even using one though is tricky because of the unavoidable deaths and slightly tricky controls.

If this looks like a challenge you'd enjoy, give it a try.

INFINITE LOOP

THE STORY OF THE MICRODRIVE

Clive Sinclair claimed on 23 April 1982 that he would revolutionise home computer storage by introducing a new add-on. It would be significantly cheaper than the established 5.25-inch and emerging 3.5-inch floppy drives of the time, though not as capacious or as fast to serve up files. Sinclair's new add-on would "change the face of personal computing".

Yet this "remarkable breakthrough at a remarkable price" would take more than 18 months more to come to market. In the meantime, it would become a byword for delays and disappointment - and this in an era when almost every promised product arrived late.

Sinclair's revolutionary product was the ZX Microdrive. This is its story.

At the launch of the Spectrum, held on the first day of the Earl's Court Computer Fair, Sinclair presented a prototype Microdrive to assembled journalists and provided a brief overview of the device's promised capabilities. Many of the gathered hacks were impressed.

Popular Computing Weekly reported; "This is a very tiny disk drive using two quarter-inch diskettes, with each diskette capable of holding 100KB, and a transfer rate of 16KB per second. You will be able to connect up to eight of these drives to the ZX Spectrum... The price: £50."

That was indeed a "remarkable price". Commodore's single-disk 5.25-inch drive for the Vic-20, launched around the same time, was priced at just under £400 - eight times the price of the Sinclair offering. Even Sony's aggressive launch price for the 3.5-inch drive it brought to the UK in November 1982 was still, at £235, much higher than that of the Microdrive.

So why was Sinclair's drive so much cheaper?

The drive was not immediately available with Sinclair admitting the Microdrive wouldn't go on sale until later in the year. The company, however, was still struggling to fulfil orders of the Spectrum, and would do so for the rest of the year. The hype and build-up though went on.

"Our Microdrive, when it comes out, will revolutionise mass storage thinking," said Sinclair engineer Martin Brennan in the 18 November 1982 issue of Popular Computing Weekly.

As 1982 came to an end, the section within Sinclair's Spectrum advertising describing the Microdrive began to change. Ads from 1982 had described the product as a "a single interchangeable microfloppy". But by the end of the year, that text was changed to read "a single interchangeable storage medium". The release window went from "later this year [1982]" to "the early part of 1983".

By the Spring of that year there was still no sign of the promised product and Nigel Searle announced; "The design has been finalised and we are now waiting for custom-made semiconductor chips - being manufactured in the UK - to arrive,"

"The delay on the Microdrives has been the result of mechanical difficulties we had not foreseen," he added. "These have now been

Sinclair ZX Microdrives and ZX Interface 1
The affordable alternative to floppy discs...

solved along with an improvement in the performance of the drives. They are now much more reliable than we had hoped to achieve."

By now it was being rumoured that the Microdrive was not based on rotating disk technology, as the early advertising's reference to a "microfloppy" had implied. Indeed, most attendees left the Spectrum launch assuming from what they'd heard that the Microdrive used some kind of diskette. Instead, it would use a "high speed tape loop", as *Your Computer* put it at the time.

LOOPER

Eventually, Sinclair Research's development work was done and, in July 1983 - after some grumbles by the Advertising Standards Authority - the company announced it would start shipping drives, along with the ZX Interface 1 add-on required to hook them up to a Spectrum, the following September. It was confirmed that each 43 x 30 x 5mm Microdrive cartridge contained not a disk but a loop of tape, 2mm wide and claimed by Sinclair to be made of the same material as high-quality videotape and not what you'd find in an ordinary audio cassette.

By all accounts, the Microdrives were always intended to be tape-based technology. So how did they come about?

Sinclair had an early introduction to the notion of tape-loop storage in the summer of 1974. A young engineer called Andrew Grillet, who had indirectly done some work for Sinclair Radionics through a stint at one of its sub-contractors, was interviewed for a job with the company. When asked about ideas for storage systems he proposed something based on the eight-track music cartridge popular in the early 1970s before Philips' Compact Cassette format took hold.

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"This would be an ideal thing," Grillet recalls, "because you could do roll-out, roll-in swapping. You'd need to have the tape shortened so you had two 64KB memory images on the track only, so you dump one and read the other, or at least if you had to wait for it to go round and switch to another track you wouldn't have to wait too long.

"And that's basically what the Microdrive was, except the eight-track cartridges were enormous and they shrunk the cartridge down a bit."

Grillet did not take the Sinclair job, instead opting for a higher paid position at Xerox.

He thought no more about the tape storage system until April 1982 when Sinclair Research announced the Microdrive. In his 1985 book, The Sinclair Story, Rodney Dale, a one-time Sinclair Research employee, claims Sinclair product head, Jim Westwood, and Sinclair's Chief Engineer, David Southward, jointly conceived the Microdrive in 1982. That was eight years after Grillet's interview. Were these men his two inter-viewers, and had his notion remained hid-den in the back of one or the other's mind until a new need to deliver a better-than-tape, cheaper-than-diskette format arrived? We will probably never know.

The Microdrive wasn't a random access system, but by moving the tape sufficiently quickly it was possible to make it appear to

offer a kind of pseudo random access. At best the file you were seeking was just ahead of the read head's postion, at worst the device would have to spool right through the tape to reach the requested item.

Back at Sinclair, David Southward, who oversaw Sinclair Research's work on periph-eral devices, put the analogue electronics work in the hands of Ben Cheese, an Electronic Design Engineer.

Inside the Microdrive

Both Southward and Cheese were based at Sinclair Research's facility in The Mill, St Ives, Cambridgeshire. In a Sinclair staff guide of 1982, Cheese is described as "currently designing the Micro Floppy electronics". Meanwhile, over at Sinclair's King's Parade office in Cambridge, the company's industrial designer, Rick Dickinson, worked on the look of the drives and the cartridges.

Dickinson says the look of the Microdrive came directly from the Spectrum itself, the unit replicating the computer's plastic casing with its distinctive raised rear section - there to make room for the TV modulator in the case of the computer - and even featuring a

black-painted aluminium upper faceplate, as per the Spectrum.

The ZX Interface 1, which would connect the Microdrive to the Spectrum, was engineered by Martin Brennan. He designed the Interface 1's electronics and produced the unit's Rom chip, writing its networking code himself. The mechanical design was handled by John Williams.

Brennan recalls becoming involved in the Microdrive project because, he was keen to see one of the promised 'revolutionary' drives and asked if he could. This was seven or eight months after the drive had been announced. It became immediately clear to him that there was still a lot of work to do. He remembers; "Almost nothing had been done on the electronics side and nothing on the software."

Ian Logan, a Lincolnshire-based freelance coder, author and medical doctor, was commissioned to write the extra Basic commands Spectrum users would enter to operate the Microdrive. These were built into the Interface 1's 8KB Rom chip and patched onto the Spectrum Basic Rom when the Interface was plugged in. Bug fixes for the Spectrum Rom were added too.

Wanted: Spectrum Rom expert

The Spectrum Rom had been developed by Steve Vickers on behalf of Nine Tiles, the software developed commissioned by Sinclair to produce the Spectrum's Basic interpreter and operating system. Vickers left Nine Tiles in May 1982.

Enter, then, Ian Logan, whose work had given him that knowledge. Logan pinpointed three memory addresses Brennan could use as a jumping off point to intercept the Spectrum's Basic interpreter and redirect the computer's program counter to the Interface 1 Rom and the Basic commands it added.

Logan states; "There is very little to the insides of the Microdrive. There is one ULA and the dual heads which read the tape. The Microdrive program was developed on EPROM. If there were corrections to the program I would go to Cambridge with the alterations and we would blow a new EPROM."

The ULA was designed by Ben Cheese, the internal mechanics by John Williams. Jim Westwood provided guidance on how the Microdrive should be handled in Basic.

Logan revealed that the initial 100-odd Microdrives all went out with EPROM chips, to allow them to be updated.

It quickly emerged that there were other problems too. While many reviewers were generally positive about the Microdrive - the speed was the main issue; it wasn't really quick enough to be a floppy killer - only regular usage would reveal the design's weak spots.

Like all media based on very narrow, thin magnetic tape, the Microdrives accumulated particles of the magnetic oxide material, a problem exacerbated by the need to pull the 2mm-wide tape out of the centre of the storage reel - from where it was fed in a loop over the read head and back to the outer edges of the spool - and the extra friction it induced.

The tape was moved by a rubber-wrapped wheel in the Microdrive, pinching the tape between it and a plastic wheel inside the cartridge. Firing up the drive, taking the tape's speed at the head from zero to 750mm per second, would give the tape a big tug, leading to stretching at the point where the tape emerges from the centre of the storage wheel. Later versions of the drive incorporated a 22μF capacitor to allow the motor to come up to full operating speed more smoothly.

Even Sinclair, in the Microdrive manual, had to admit: "Microdrive cartridges will not last forever, and will eventually need to be replaced. The symptom of an ageing cartridge is that the computer will take longer and longer to find a program or file before loading it. So it is a good idea to keep back-up copies of important programs and files on another cartridge, or on a cassette."

While the drives were, at £49.95 a throw, considered cheap, replacement cartridges, which cost £4.95 each, were not. That's about three times the price of a 5.25-inch floppy disk at the time. Storage capacity, initially said to be 100KB, had by launch become "no less than 85KB", to allow for capacity lost to tiny differences in the length of the tape in different cartridges, motors running at slightly different speeds in different drives and, to a lesser extent, bad sectors on the tape.

Each cartridge could hold no more than 50 files, and information had to be read into memory, changed, the original erased and the new version written onto the tape. There was no way to modify the files directly, a consequence of the drive's lack of true random access.

The drives themselves had flaws. Adding extra drives seemed easy: just join them with a ribbon cable that clipped into the side of each unit. But each drive also had to be screwed together using a special bracket - clearly, Sinclair Research was worried that an inadvertently knocked drive would break its connection, crashing the system and potentially losing a user's data. Up to eight drives could be lined up alongside each other this way.

It was later found that the mounting for the microswitch used to sense whether a cartridge's write-protect tab had been removed

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was placed in a way that overly vigorous insertion of the cartridge into the drive could cause the mount to bend, "causing incorrect switch operation", as a later, October 1985 Microdrive service manual reveals.

Rush to production

"I believe Clive rushed the Microdrive into production too soon." remembers John Mathieson, in the early 1980s a Sinclair engineer working alongside Ben Cheese and Martin Brennan, though not directly involved on the Microdrive project. He designed the ZX Interface 2, the add-on that would allow the Spectrum to accept Rom cartridges.

As Brennan and Cheese ploughed on to complete the electronics and the software, others under David Southward refined the drive's mechanical engineering. Brennan recalls a hectic pace - "coming in to work on Saturdays and Sundays; working late most evenings" - but no specific deadline to which they all needed to reach.

The promised 100KB capacity was still a problem. Using an analogue storage medium, the tape loop inside the cartridge, meant Cheese had to deal with a frequency response that was not only not flat but varied with the speed at which the tape passed over the read head. Speeding up the tape improves the response, but at the cost of storage capacity for a given length of the material. Getting an even frequency re-

sponse is essential if the system is to accurately pick up the changes in frequency which encode the 1s and 0s of binary data.

Cheese, backed by Brennan, argued that Sinclair needed to play it safe with capacity, and they were able to convince Southward and Searle that the capacity should be 85KB, with the potential for a higher value if a given tape and drive were in perfect alignment. That's the capacity that the Microdrive system promised when it finally went on sale in September 1983.

Of course, the Microdrive could never replace the audio cassette. For almost all users of Microdrives, the tech became a place to store their own programs and data. Few companies were able to offer software on Microdrive cartridge, at least until the Sinclair QL, which also used the Microdrive, began to sell well.

Decline and fall

Come early 1984 and Sinclair User itself was claiming fewer than 1000 Microdrives had been sold. It reported on two applications that had been adapted to make use of the Microdrive for data storage - Campbell Systems' Masterfile and Richard Shepherd Software's Cash Controller - but added that only "several companies have shown interest in putting software onto Microdrive cartridge". For most games developers, the technology was too pricey: the young gamers who were their customers had pocket money enough for tapes, but not for Sinclair's new storage system.

Sinclair did try to remedy things in early 1985 by reducing the cartridge price to £1.99 bringing them into line with floppy disk prices. "Microdrives have truly come of

age now and we anticipate that this technology, exclusive to Sinclair, will continue to be the preferred method of data storage for most Spectrum Plus and QL owners." Was the statement by Clive Sinclair. But it wasn't to be. Microdrive software did come in greater numbers thanks to the cartridge price cut, but not in a volume to come close to the number of Spectrum cassettes on sale.

When Amstrad acquired the ailing company in 1986 for £5 million, it formally knocked the computer and the Microdrive platform on the head. Amstrad was keen on the 3-inch diskette format it had bought in from Asia for its PCW8256 word processor, and wanted to spread to other machines, the Spectrum and its own CPC among them, to achieve lower drive prices through greater purchase volumes, and to grow the user base. So out went the controversial Microdrive.

Amstrad's favoured 3-inch diskette format would eventually go the way of the Microdrive, as would the old 5.25-inch floppy: the industry would shift to the 3.5-inch format, the chosen mechanism of new, 16-bit home machines like the Commodore Amiga and the Atari ST, and of business and professional computers, from the Mac to the ever increasing number of IBM PC compatibles.
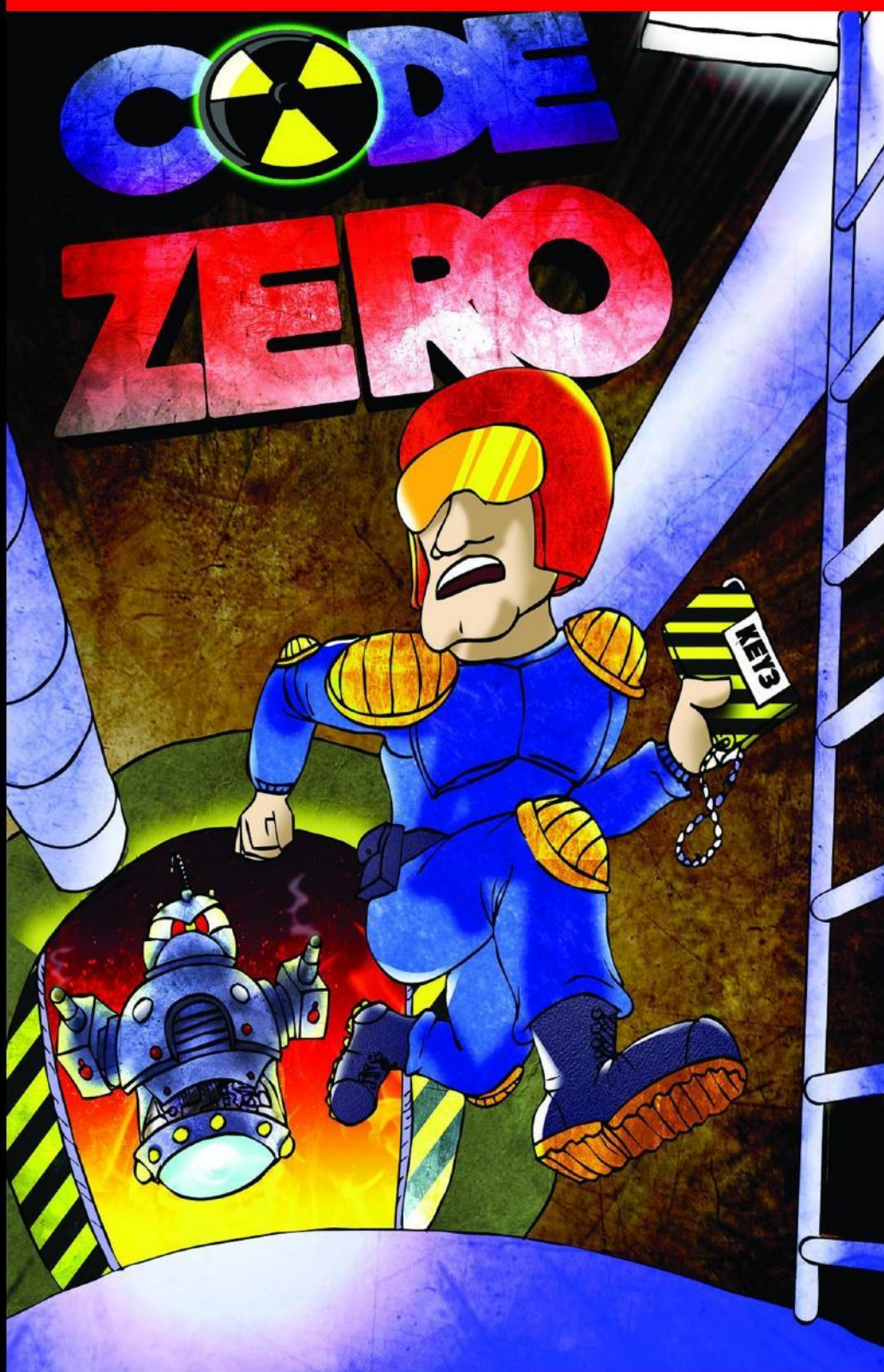
While the Sinclair Microdrive may have been, then, something of a dead end in the evolution of storage, that shouldn't detract from the novelty of the technology, nor of the efforts of Ben Cheese, John Williams, Martin Brennan, Rick Dickinson and Jim Westwood to turn them into a viable commercial storage system for home micros.

BONKERS

Procom Software 1983
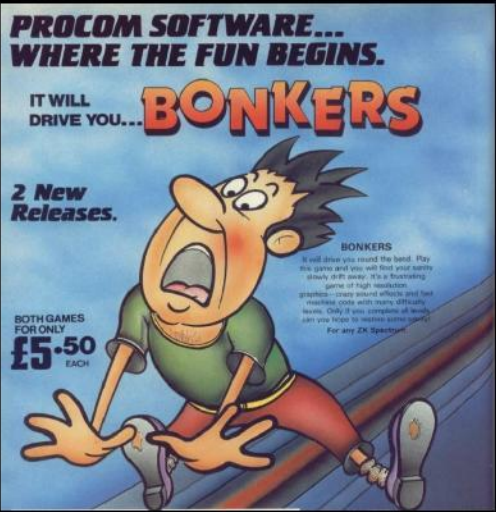
Anyone around in the early life of the Spectrum will have seen the advert and it certainly stuck in my mind. Now finally I can try the game out and see if it lives up to my expectations.

The story goes something like this.

Earthlings are trapped in a space station and to escape you have to guide them to the airlocks at the bottom of the screen. Obviously this is not as simple as it sounds and there are evil aliens to get in the way.

Each earthling starts at the top of the screen and walks to the start position before the game begins, which is a nice touch.

The screen is split into layers representing floors and lifts. The lifts move across the screen and you have to jump in and out of them to eventually get to the bottom.

The game is a kind of reverse Jumping Jack crossed with Frogger and plays really well. As each level is completed, another chasing alien is added, so things do get hectic.

Level three has a Pacman-like character too!

The graphics are simple, but well animated and the sound is used well.

This is a nice little challenging game, fun to play and enjoyable.

Yes, it's simple, but it is just over 6k in size.

These early game are sometimes tricky to review, as their simplicity can be summed up in a few words. The gameplay though great, and this game is very playable.
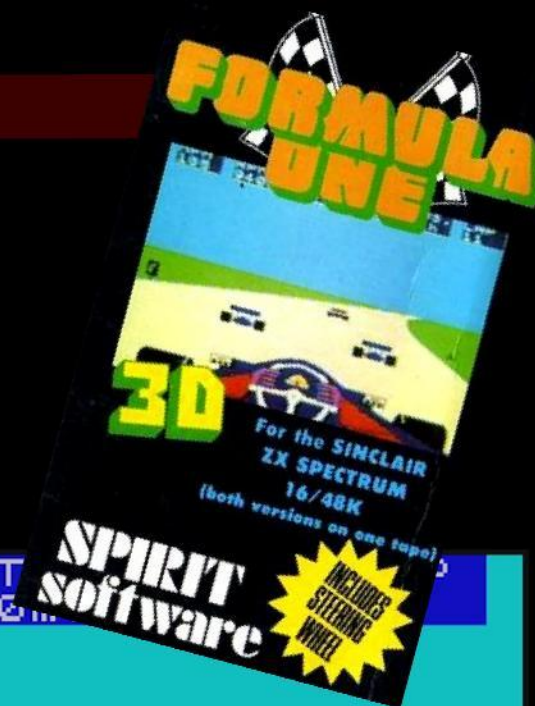
A great little game... that's worth a try.
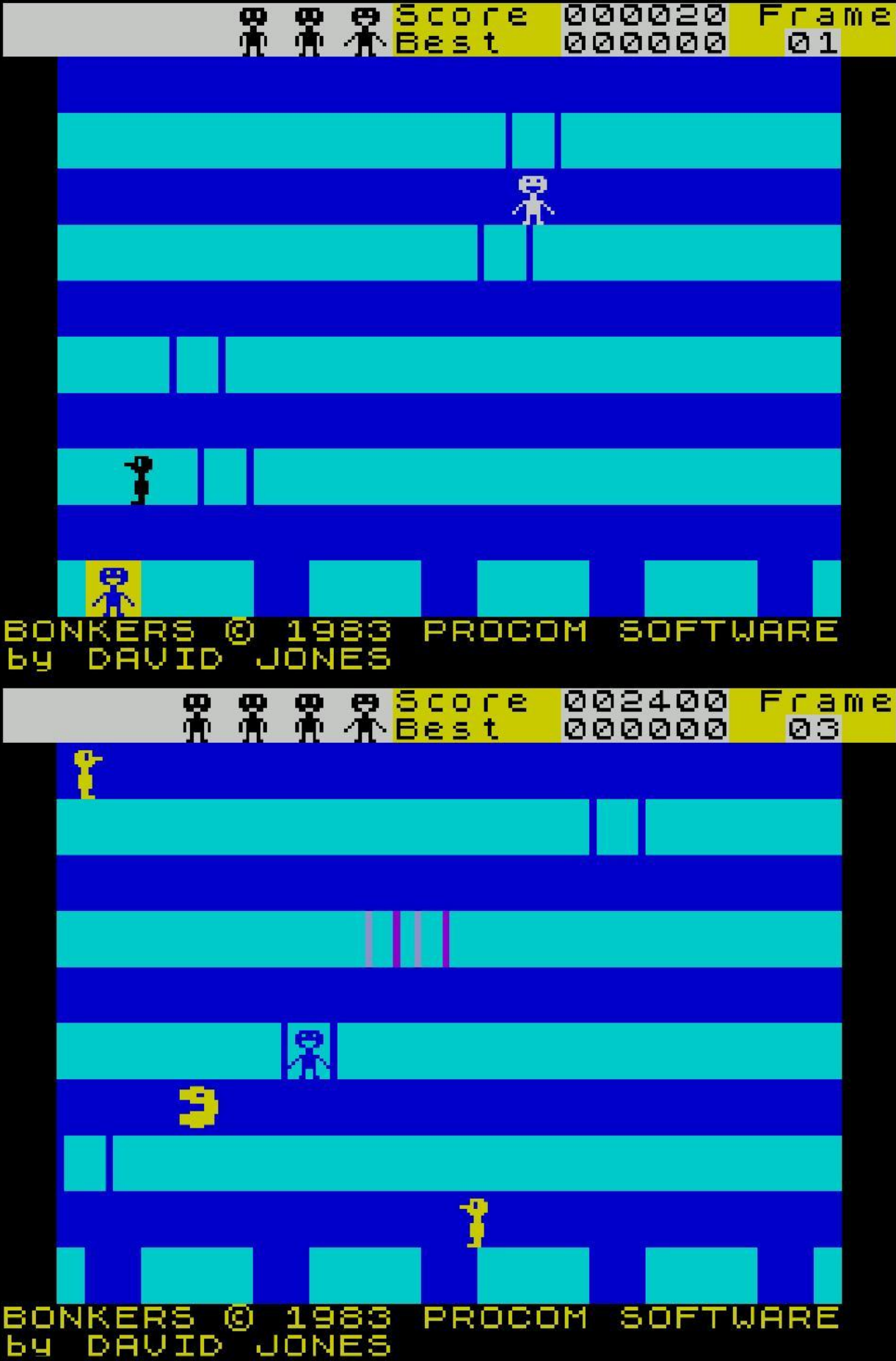
FORMULA 1 SIMULATOR

Mastertronic 1985

This game was originally published by Spirit Software a year previously, complete with a plastic steering wheel that you placed on your keyboard to steer. This piece of hardware though may never have made it out to the public, as none exist and no photographs have surfaced of it. Masteronic got rid of that though, added a better loading screen, and allowed you to control the game via the keyboard or various joysticks.

The gamer has a variety of tracks to race on, including the usual Silverstone, Brands Hatch and Monaco and these can be chosen at the start of the game. You also get a choice of manual or automatic transmission and wet or dry environment. You also get to chose if you want to do a practice lap first or get straight into the action.

I went for a few practice laps first just to get used to the controls and car handling, and then went in to qualify.

The track is strangely empty, and I don't just mean cars, I mean no verge, no roadside objects, no clouds, no hills. Very basic graphics are used and the screen looks bland and lifeless as a result.

The car is depicted as a static image at the bottom of the screen and nothing moves. The wheel does not animate, your hands don't move, there are no dials and the mirrors are a waste of space to be honest. Although when, or if you eventually overtake, a little car will appear in them.

Control is not too bad once you get over the dullness of the tracks and you brake into the corners with a nice engine noise. Skidding produces another noise, and going off the track too far will result in you crashing out – no second attempt in this game!

Once you qualify it's time to race some opponents and they all drive green cars, at least until they get closer to the graphics of your car, then they turn black.

The track is very crowded and overtaking is almost impossible. Maybe I was too eager but I either crashed off the track or into the cars. Not a very rewarding game at all.

The obvious selling point was the plastic steering wheel and with that gone, this is just a poor Pole Position imitation.

An average game, and if anyone has the steering wheel, I'd love to try it out and see if it improves the game at all!

R-TYPE™

Electronic Arts 1988

A desperate battle is being fought out in the limitless and unknown dimensions of space, which have been contaminated and corrupted by an evil power.

But Mankind is fighting back, and sends you into battle in an incredibly sophisticated plane, the R-9 fighter.

Originally released in the arcade by Irem in 1987, R-Type was an instant hit and is instantly recognisable even today. The smooth scrolling, multi-coloured backgrounds, multitude of enemies, huge rotating bosses, exquisite scenery, loads of weapons and superb gameplay helped place this game at the top of many fans' lists.

This side scrolling shooter had many features including large details levels, a charge shot that could be activated by holding the fire key down to produce a more powerful blast and a pod or out-rider that can attach to the front of the players ship for protection, or be fired at enemies.

Noted as being difficult to play as each level had to be memorised for success, this was quickly ported to many home systems, with the Spectrum version being acclaimed as one of the best. Impressive considering the limitations of the machine. Yes, the Spectrum conversion was superb, but hard as hell.

The impressive title screen leads the player into

this excellent shooter and the all-too-familiar game starting sequence. From here we are treated to detailed and colourful landscapes that scroll smoothly along with a barrage of aliens, all multi-coloured, well drawn and smooth moving.

This 128k game features some great sound effects and gameplay – but you will need to practise if you want to get far. This is an unforgiving game and you will soon find yourself outnumbered and

out-gunned. Learning the enemy patterns is important, as is learning the best time to use the out-rider and super blast. Like the arcade version, you can charge you beam by holding down the fire key to produce more powerful shots, and this comes in useful for those tougher enemies.

If you get far enough, your little pod becomes available and this adds several elements to the gameplay. You can use it as a shield, you can have it fire missiles or you can fire it forwards to destroy aliens.

It isn't long before the screen gets full of fast moving enemies, and it is a real task to get past them. There are also ground based enemies, and like the others, they fire almost continuously, testing your reactions to the limit.

Eventually the scenery changes and whole new impressive backgrounds scrolls into view.

This is one tough game though, and for me to get far I had to use pokes.

More weapons become available the further you get, including the diagonal bouncing lasers, and with all this onscreen I am amazed the game speed doesn't suffer; a masterful bit of coding.

You can also upgrade your pod and get additional outriders just like the arcade version. It's all in here, and yes there are massive end bosses too.

There are multiple levels loaded from tape and each has new scenery and challenges.

I love shooters. I think R-Type is a brilliant conversion and although I'm crap at it, it doesn't stop me from enjoying this great game.

GOOD OR BAD?
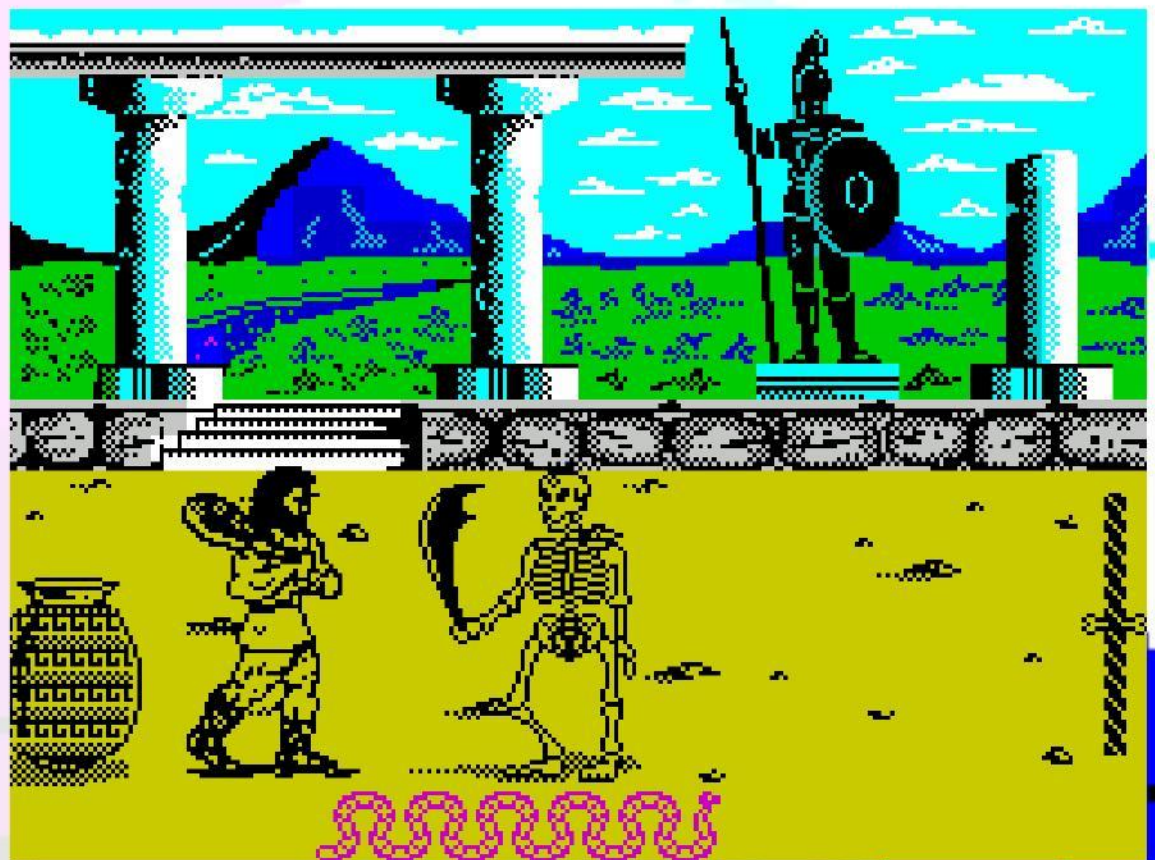
WHAT MAKES A GOOD GAME?

The Answer?

Every person is different and every person has their own opinions about what makes a game good. Some are drawn to crisp, well defined and smooth moving graphics while for others this is not really important. Hercules Slayer of The Damned has excellent, large graphics that make the game look great but the gameplay is terrible. In this case the graphics do not make the game good, they make screenshots and adverts look good but ultimately let the player down. On the flip side there is Rex. Again with slick, beautifully animated graphics and a deep and engrossing game providing the player with a challenging experience.

There are many instances of games that are addictive and challenging but have terrible or basic graphics. Mushroom Man is such a game. A simple yet clever puzzle game with the most basic of graphics. Using the Spectrum's 8x8 user definable graphics that move in 8 pixel jumps, they admittedly look poor. Where the game wins though is through challenge and progression. It is about solving the puzzles and getting to the next level, and the graphics are just really place holders and indicators rather than integral elements. They are used to give the player hints with varying, clear design that set the brain down an analytical pathway with a view to completing the level. As each level is mastered, more elements are added providing a nice gentle learning curve.
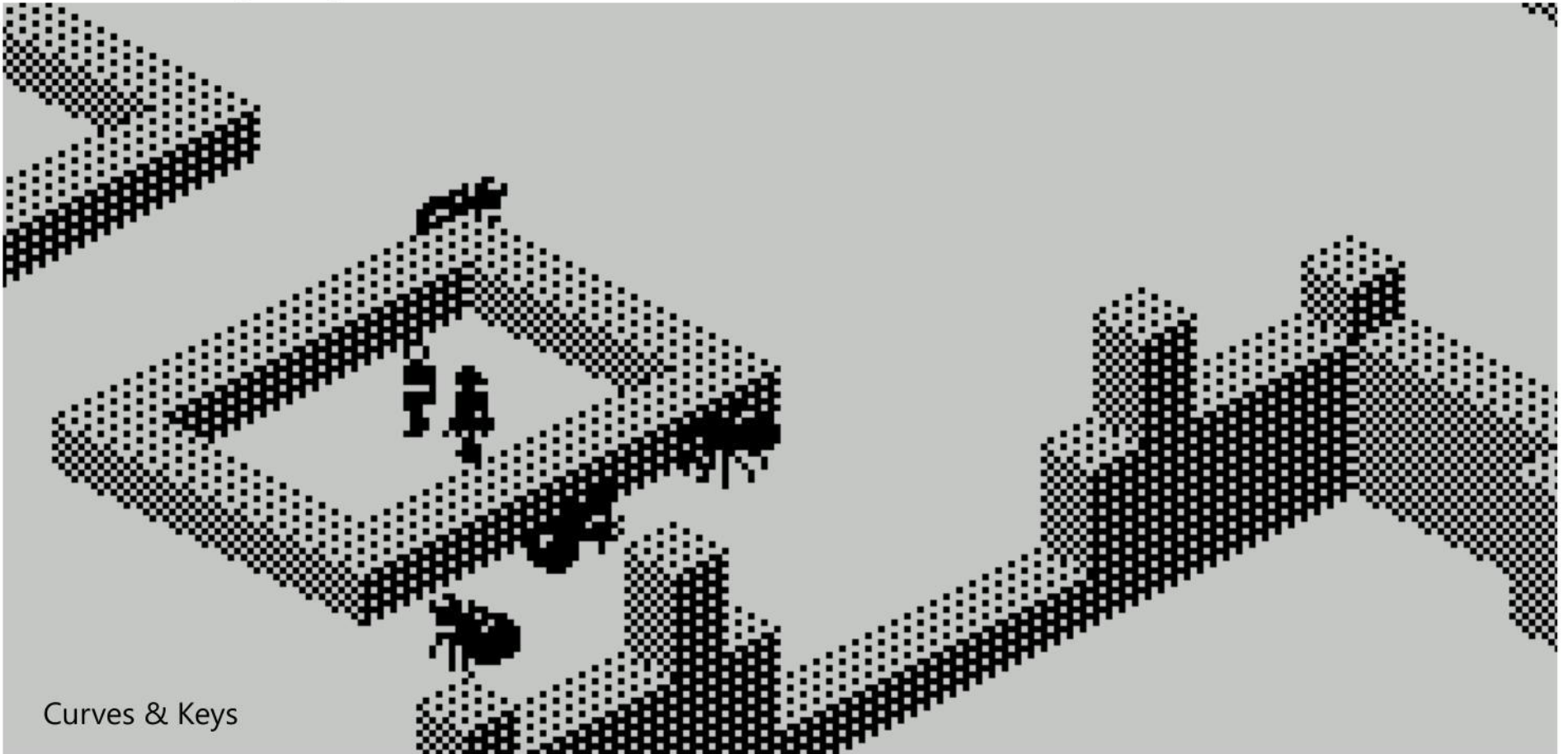
Nice graphics - shame about the game!

Hercules - Slayer Of The Damned

What makes a good game?

Curves & Keys

What about the learning curve? This is an important element for games and it sets out how quickly and easily a player can get into it. Take Space Invaders for example, the classic arcade game with multiple clones on the Spectrum. The simple controls of left, right and fire coupled with linear gameplay make this a joy to experience and you don't have to work out key combinations or trawl through documentation to enjoy it.

For a home micro that did not have a joystick port, most games allowed control via the keyboard. In fact early games were limited to only

this method of input. As games grew in complexity the number of keys needed got ever larger. This leads us to the next question; are the number of keys linked to a game being good?

3D Ant Attack is a classic example of a game with multiple keys and yet it remains uncomplicated and easy to play with an inviting learning curve. The first person you rescue is a few paces inside the city. This gets the player used to moving and jumping. As the game progresses, the location of the stranded person becomes trickier to navigate to and the use of grenades becomes essential. I would say this game provides an almost perfect learning curve.

Knight Lore is well known for breaking the mould in the Spectrum world with its brilliant isometric graphics and beautifully drawn sprites, yet the game has quite a steep learning curve. Not only do you have to contend with the 3D environment, but also the multiple keys, object manipulation, random enemies and spatial awareness to navigate the 3D world. Yes it looks good but for me, this game throws the player in far too deep at the start. It would have made better sense to gradually introduce the player to different things and have easier jumps at the start. All too often I get a few rooms into the game and run into a room that just makes movement difficult

without pixel perfect jump, rotate, drop and collect actions happening at the same time.

Good level-based puzzle games seem to have got this right by introducing new elements with each new level. The first level, for example, may need no more than to follow a set path to complete it. The next level may need a switch to be activated to allow the exit to become visible. The next level may need a key for a locked door to get to the switch, and so on. The later levels then need the player to do several things to complete them along with a limit on the usage or time. This approach introduces the player to new ideas as progress is made and does not confuse or flood them with every mechanic in the game from the start.
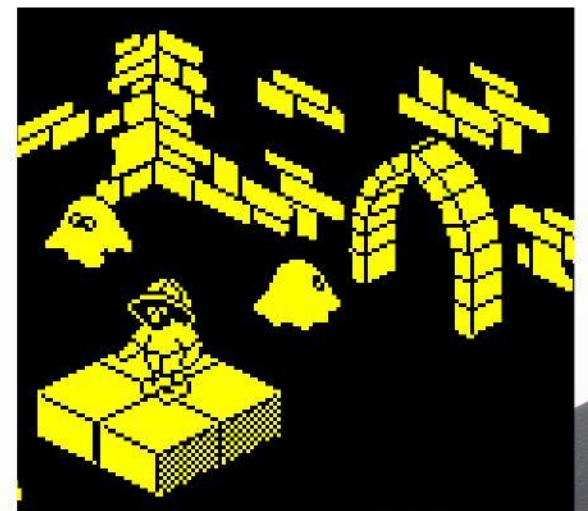
BEEP BEEP

So far, we have focused on graphics and game play mechanics, but what about sound? The Spectrum had a limited capability where making noise is concerned, but correct and clever use of sound could improve a game. In fact, it can make or break it. To prove my point, try playing your favourite game without any sound, and you will soon realise just how much sound adds to the overall experience. During my completion of Jetpac, both times at retro events, I had no sound. It was off-putting and I really missed those wonderful zaps and burps. Of course, some games produce an awful racket, and even the very best games can suffer from bad sound.

Constantly playing music was a novelty when it first appeared in Mathew Smith's excellent Manic Miner, but after playing the game for 30 minutes, it begins to get on your nerves. Luckily you can turn it off, but music does help, either on the intro screen or in-game. A nice little suitable tune playing helps puzzle games bounce along and changing music for different levels gives a feeling of exploration and progression. A good example of a newer title that does this really well is Castlevania ZX.

Aching Fingers

We have already mentioned multiple controls, but this can also play a part in how a game feels and how easy it is to adjust to playing it. There are several standard control models for games depending on what type of game it is. The most basic is Left, Right and Fire (or jump). This is usually associated with space shooting games like Space Invaders, or platform games like the aforementioned Manic Miner. These few keys are easy to remember and put the focus on the actual game. You don't have to look down at the keyboard once your fingers are in place, and that helps a great deal.

"You don't have to look down at the keyboard once your fingers are in place"

The next model is Left, Right, Up, Down and Fire (or jump) and is used in a wide variety of game styles like Cookie, Sewer Rage and Genesis Dawn of a New Day . The usual key layout for this is O, P, Q, A and M, which is easy on the hands and feels natural when playing on a real Spectrum. Again, this simple model puts the focus on the game.

The two models mentioned above are also easily playable with a joystick which is very important. Early Spectrum games did not have joystick options because joysticks were not commonplace. As they became more available and standards, like Kempston, emerged, more games adopted the model and having a game with five primary controls meant it was easily translated.

What makes a good game?

Anything beyond those two models would require additional keys, which meant the player had to not only remember which key to use but also usually move their hands and fingers away from the main ones. This could impact on gameplay and move the focus away from what is happening on screen and onto which key to press. This model usually decreases enjoyment of the game in proportion to the number of extra keys required. This is of course null and void for text-based adventure games.

So far I have been basing the article on action games, where the fewer keys required to control play provides a better experience. However, there are other game types where multiple keys would not distract too much. These usually fall into the RPG or strategy formats, for example Lords of Midnight, where accurate control or fast reactions are not required. This does not mean that key layout becomes less important.

If a game requires multiple keys then having appropriate commands connected to them becomes important. For example, it could be considered bad practice to have a Map key not assigned to the letter M. Using the command initials for control makes remembering them a lot easier.

Allowing users to define the keys themselves is also important, as many players prefer different layouts, especially now that gamers play on emulators rather than the original hardware.

Tell Me A Story

Does a good story help a game? I suppose it depends on the type of game. For a shooter, there is very little point in having a large detailed story about an evil alien race attempting to take over the galaxy. Who wants that when there are things to blast? However, entering an adventure such as Valhalla without knowing what you are supposed to do would be pretty pointless.

A story should really reflect the game and introduce players to the game world, whether that is a single screen puzzle game or a massive landscape full of danger. Some games go all the way and include novellas, and this can help. The Hobbit when it was released in 1982 included the actual book, as reading the book would give the player hints about how to solve various puzzles.

A story can be as simple as; "Little blob has to rescue his chums from the evil dragon using magic orbs in the dark forest." or be as complex as Lord Of The Rings. But it must be relevant and aimed at the audience for the game.

"The Hobbit when it was released in 1982 included the actual book,"
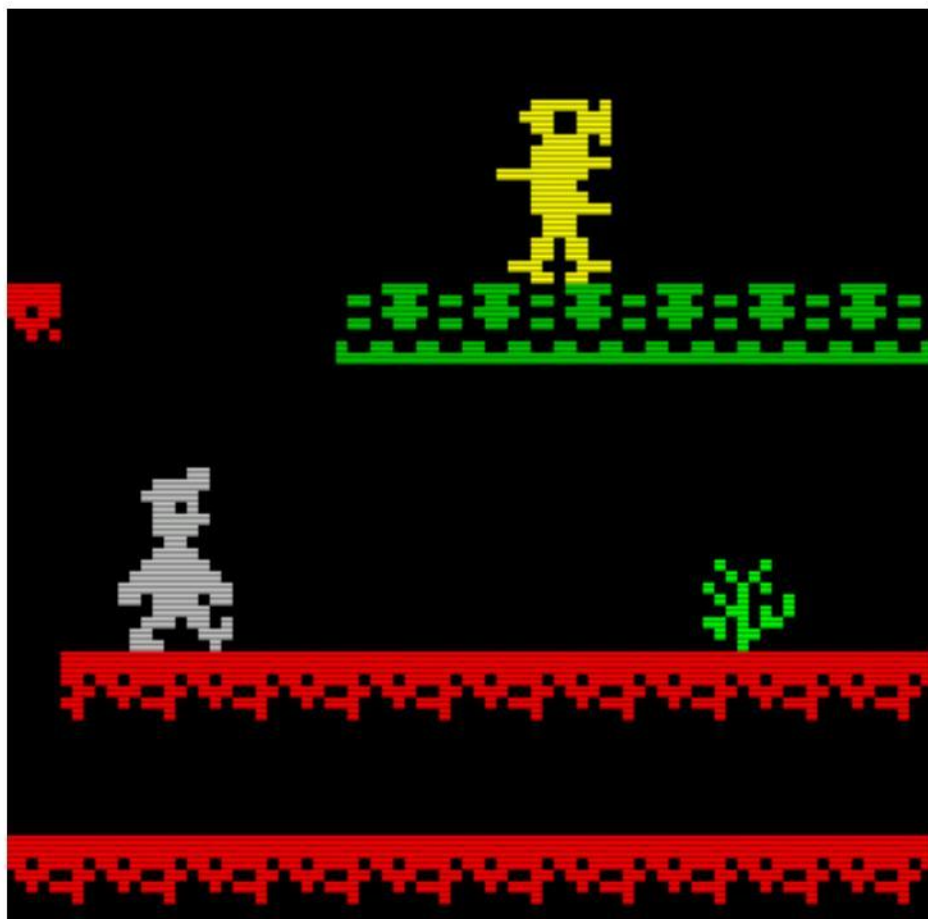
Characters

Valhalla, as mentioned above, did have another good feature, characters. Each character was identifiable on screen as you moved around the world. So what about characters?

There have been many memorable characters on the Spectrum. Horace, Miner Willy, Ziggy, Monty Mole, Dizzy and Egg Head to name but a few. Do these help sell games,? Absolutely. Do they make them better? Not really.

A good character always helps a game, especially if the control method remains the same. This helps players get straight into things as they buy each new title, and if the gameplay is the same but in a different locations (Dizzy is a good example of this) then all the better. Maintaining a character means players look forward to the next instalment, and are eager to see what their hero does next, but this is not a sign of a good game, merely good marketing.

Skills

Game players have a wide range of skills from the hard-core gamer who can complete Jet Set Willy every time to the absolute beginner who can't get past the first screen in Manic Miner. Catering for all skill sets has always been a problem for game producers. Make the game too easy and it gets completed quickly and the player can feel cheated. Make it too hard and you lose all the less skilled players that may grow to be better and so buy more games. Having different skill levels is a good option here, and allows the game to be played at different levels. This also extends the games life as once you complete it on an easy level, you can move up.

Many games like Bear Bovver have a training level, where the player can get to grips with the controls without being killed. This is another way to tackle the difficulty problem. The earliest game I could find to include this type of option is Black Hole by Quest Microsystems. Some games that offer this feature also do not include certain features in that mode, so if a player wants to see the full game, they have to play the full version.

"Maintaining a good character is not a sign of a good game, merely good marketing"
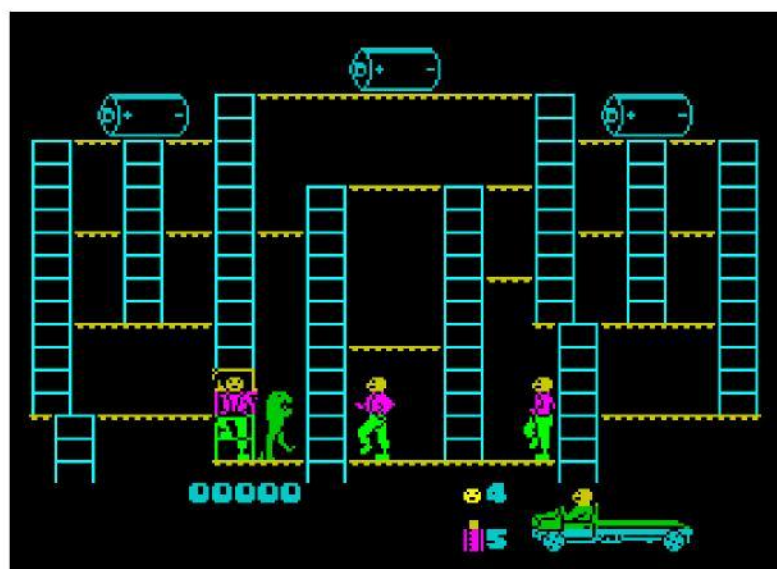
What makes a good game?

Boxing Clever

Sound, graphics, keys, difficulty; all focuses on the actual game itself, but what about packaging? Certainly some of the earlier games had terrible inlays. In contrast releases from Quicksilva or Ocean had some really outstanding art work. Whether this would affect the game though, is a difficult question. It should help get the player involved and provide a nice atmosphere. Remember, inlays were often read and examined closely during the loading of a game, unlike today's emulation, where games are loaded instantly. Good artwork, for me, certainly helps to make a game better. It could of course have the reverse effect by building up the player's expectations too much, and then letting them down five minutes later when they finally get to see it in action.

Along similar lines are licence tie-ins. Many of the later Spectrum games had tie-ins to either films (Batman, RoboCop, Ghostbusters, etc) or arcade games (Double Dragon, Chase HQ, Outrun, etc). This is a very dangerous area, as can be seen by the last of the games mentioned there, Outrun. With licences, the player already has expectations, they know what the arcade game is, how it plays, looks and sounds, so they anticipate the Spectrum release. Obviously they know it won't be an exact copy due to the machine's limitations, but if a company put out a slow, badly written game, sales will suffer.

Using a film licence is a little less dangerous, as the player has nothing to compare with other than the celluloid image. The developers have artistic licence to work around the film and produce something that links into it. That does not mean sticking to the film pace explicitly though, as the many Indiana Jones games can testify. The arcade adventure games for the Spectrum were, for me, a little disappointing, forcing a platform game into the film story. However, the excellent Lucas Arts adventures that later appeared on the PC were brilliant.

It's All Hype

Another subject away from the actual game is advertising and hype. Many companies spent huge budgets on advertising their games with full colour, double page spreads in many magazines at the same time, but this had the disadvantage of possibly backfiring. A good example of this can be found in all of C-Tech's games. They advertised arcade perfect, fast machine coded games with brilliant graphics, but the user got poorly written games with abysmal playability. Balancing player's expectations is a magic art, and has to be taken very seriously if you want to succeed.

Company size will get a small mention at this point, but to be honest this really doesn't matter. Take Phoenix by Megadodo Software as a prime example. Small, one-man company, great game. On the flip side Activision has produced some poor efforts with a multi-million pound budget and hundreds of staff.

To Conclude

To conclude this whole ramble then, what makes a good game?

No one knows for sure! With mixtures of all the above-mentioned things having different effects on different people it is impossible to produce a magic algorithm (something modern games seem to think is re-selling the old game over and over again – Fifa anyone?). What would be easier is to conclude what makes a bad game, but then we enter a whole new realm of discussion.

The game style defines the importance of graphics, sound and control mechanism. Get it wrong for any mixture of these and the game will suffer. Imagine a fast paced arcade game with ten different keys to control it!

Good programming and general game design along with level design if appropriate, is important and will be the difference in a player giving up in frustration or going back for just one more go.

Maintaining a character is obviously a good move if the games are successful, and not using them in something totally different, where their embedded control and movement has been established.

Story and advertising is a fine balance, and although not important to the same level as the other elements discussed here, they can, if used correctly, make a difference. They prepare a player for their gaming experience in different ways and when done badly, can actually let the player down before they even start playing the game. A prime example of this is the rather odd Motorcycle Crazy, which looks like an exciting action game, but is in fact, a rather dull text adventure.

Using expensive licences is obviously a good selling point as the majority of the hype and advertising is done by the film itself, but there is a very fine line between an good game tie-in, Robocop is an excellent example of this, and a poor, rushed game with the film name bolted to it.

What makes a good game is a clever mixture of everything that has been mentioned here, and is intrinsically linked to the individual. You will never please all of the people all of the time, as the saying goes, and this is never more true than when talking about games.

TYPE-IN ARTWORK

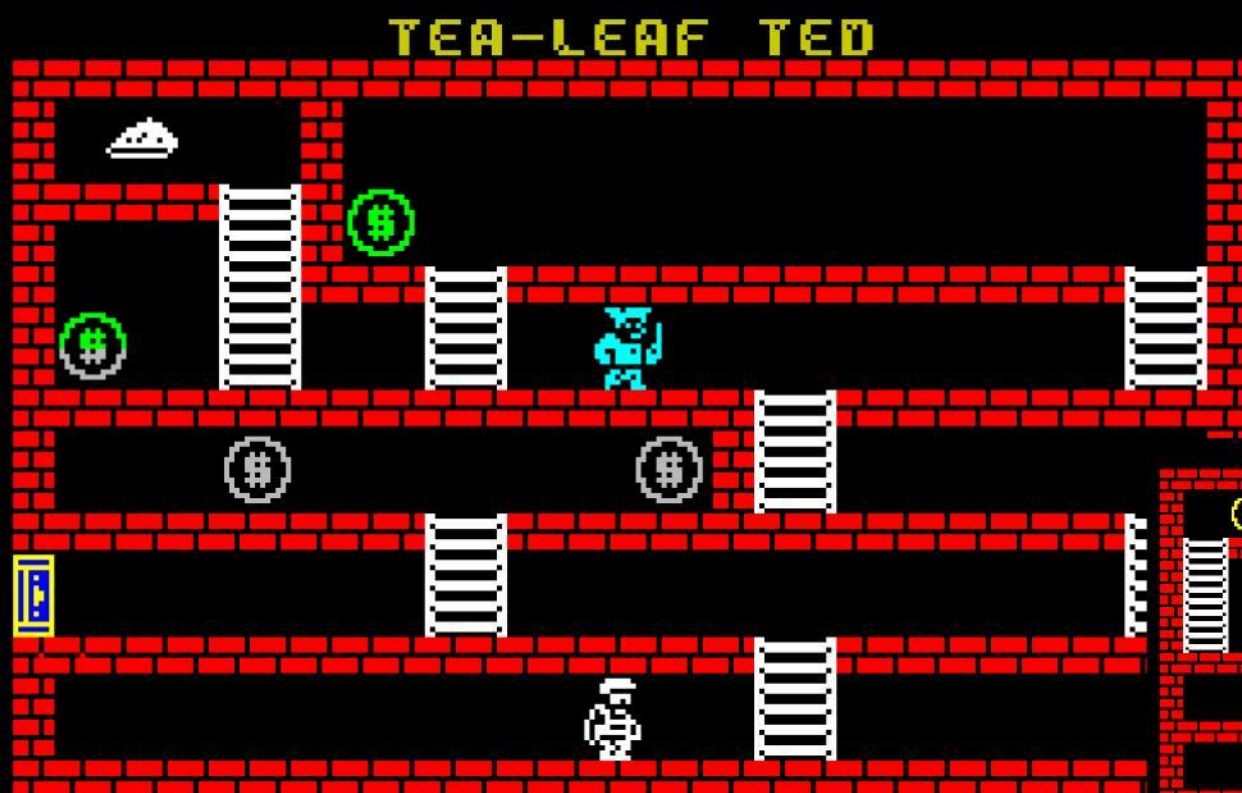**Some of the artwork that was used to depict type-in games was excellent.**

Let's celebrate it.

TEA-LEAF TED

Jaime Grilo, Prog Master, Andy Green 2018

Tea-Leaf Ted is one of those games that really reminds you of the early releases on the Spectrum. Those good old days when simple graphics but addictive gameplay ruled.

The game play is simple; collect all the coins on the screen to reveal a key. This will then let you move to the next level. It is similar in a way to Manic Miner, with single screen action, objects to collect and progression.

Randomly moving enemies have to be avoided, and because they are random, you sometimes have to have patience and wait for just the right moment. This obviously differs from the aforementioned Mathew Smith game, where all enemies were on a fixed path.

Some enemies will not kill you, but instead have an affect on your score or number of coins. This again sets it apart from the more famous platform games.

The Gold Digger sprite, for example, will take your coins from you and the dog will bite you!

Also, because they are random, it does mean you can get trapped unfairly, just like the old school games of the early 80s. Sometimes there is just nowhere to hide and you will lose a life.

The graphics are large and well drawn with some nice animation.

Sound is good with a nice tune playing all the way through and some nice spot effects.

Control is good and if you like the old school style of game play, then this is worth having a go.

It can be frustrating due to the randomness of the enemies, but certainly worth a play.

MONSTER MUNCHER

Here we have a very early game from Spectrum Games – who later went on to become Ocean Software. Spectrum Games released a few titles with some following them through to Ocean and some fell by the wayside. Monster Muncher is one of those they left behind.

I think you can tell what type of game this is from the inlay, so let's get into it!

Yes, it's a Pacman clone, but the instructions claim you have to eat apples and avoid monsters. Obviously keeping away from using names, but blatantly a clone. The graphics are large, larger than normal Pacman games of this time that used 8 pixel blocks. However the movement is still in jumps making the whole appearance jerky.

The maze is green and black rather than the familiar black and blue of the arcade, and the monsters, well yes they look like ghosts. That yellow thing you control, yes it's a Pacman. Despite giving the game a different name, colour scheme and instructions, not much else has changed.

When you eat a power pill or collide with a monster, the screen flashes, which is unnecessary, and the flash effect was often over used in early games.

Sound is OK, but even though it's a machine code game, the sound consists of various beeps rather than nice effects.

Control is sticky in that sometimes a key press is not recognised for half a second which can mean the difference between escaping a ghost, sorry, monster, and being killed.

There are different difficulty levels, but the game just increases its speed and adds more monsters rather than introducing anything different.

Gameplay is OK on easier levels and completing a maze can be done on the first try. Presentation leaves a lot to be desired, with blank text before each game, but this is a very early release.
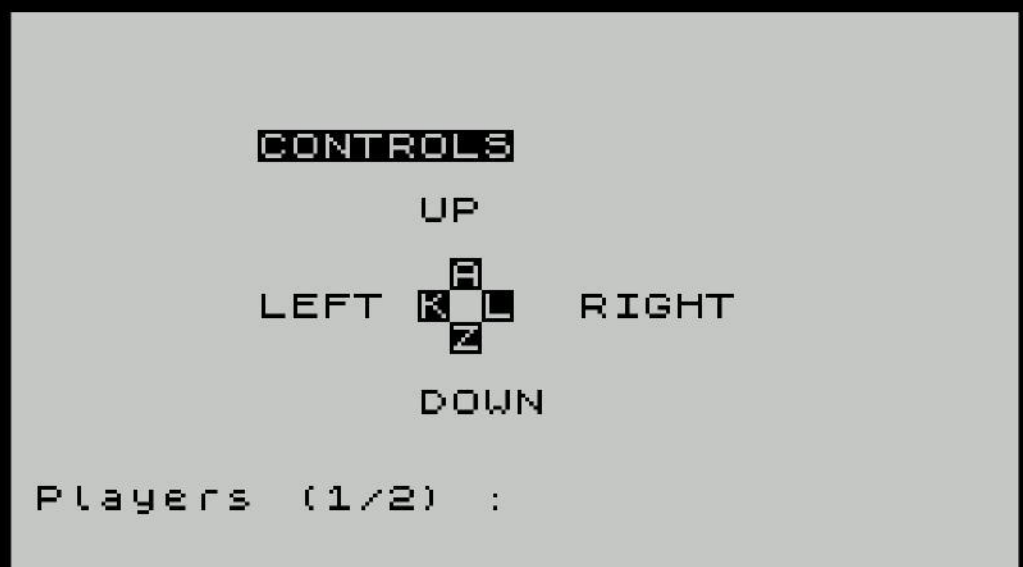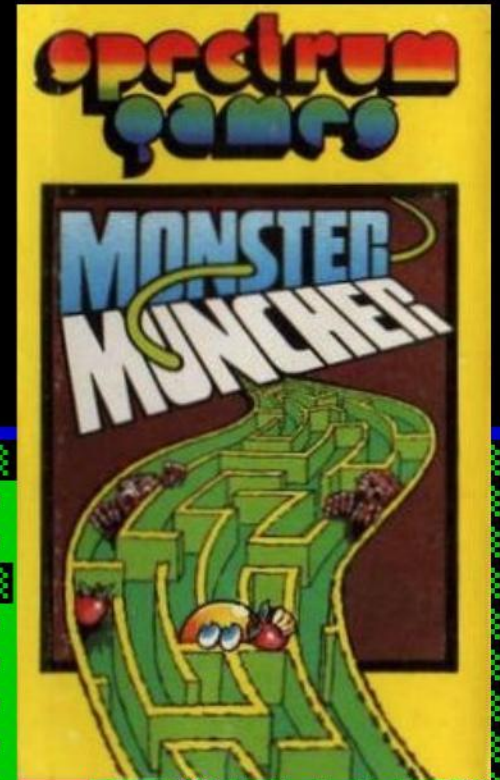
SPACE CRUSADE

Gremlin Graphics 1992

Space Crusade is not a game I own, the price is just too high, but I am reviewing it here because it kind of wriggled its way under my skin, and not in a good way. I was almost addicted and then came a revelation, but more on that later.

The game is a computerised version of the board game, and sees you controlling a group of Space Marines in various missions. It is a turn based strategy game, so it claims, and I know many people like this game, so I'll try to be kind, at least for a while.

The first mission, according to the instructions has been made as easy as possible to ease you into the game. There is no weapons selection, so you can just get in and try to complete the first level.

Each marine is chosen by clicking (if you are using a mouse) or selecting them, and then one of several options can be selected from the panel at the bottom of the screen. You can move, fire at a target, go into hand to hand combat, open doors, issue orders (only available in later levels) and do area scans.

Your first options is going to be move just to get the team out of the lift and also because there is nothing to fight or shoot yet. Each marine moves, and according to their weapon, they have limited movement. Light weapons mean they can move further than marines carrying huge heavy cannons for example.

There is a variety of weapons, and each marine has a different one. There is a small bolter which is a bolt pistol. These are light, inflicting small amounts of damage and letting the marine move a long way. There is an assault cannon. This can fire at multiple targets. There is a missile launcher that can affect multiple squares and hit multiple targets in that area. A plasma gun that can affect all targets in a straight line and then there is the power sword and power glove, only available to the commander.

The commander has excellent hand to hand skills, can move

long distances and has 6 lives, whilst all other marines just have one.

The whole mission has a time limit too and this is displayed each time you let the computer take its turn.

The moves are done in turn and you move your marines before the computer has a go. Based on random dice rolls, there are many things that can be thrown at you, and this is the major problem for me. More on that later.

As you move your marines around, you can open doors and scan, although scanning does alert aliens to your presence which can be dangerous. As you move into rooms, anything there becomes visible.

I played the game using mouse emulation, which was far better than trying to move the cursor via a joystick. You can use the keyboard or the joystick if you prefer.

You navigate through the map looking for the Dreadnought and eventually you will come across enemies of one type or another.

When you meet them, they can be various types, each taking a different amount of damage to kill. There are small Grechins, these can usually be taken out by Bolters. There are Orks (spelt with a K) and these need a bit more fire power. Then
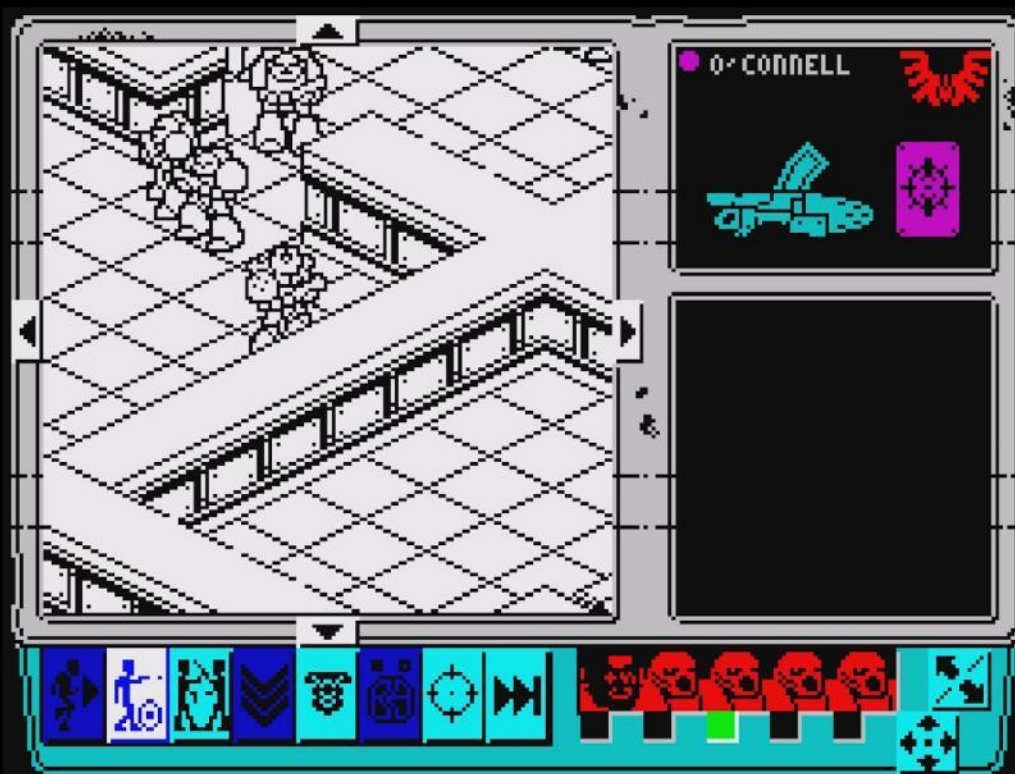
comes Chaos marines, these need some hefty fire power to get rid of, and in this first mission there is also an Android. Lastly there is the main target, a large Dreadnought, which looks like ED209 from Robocop.

Some corridors are blocked with debris that can be removed by firing at it or hand to hand combat. The map shows the floor plan, your team and any identified ene-

mies. Enemies can only be seen when they can be seen, if that makes sense, so for example you can only see what is in a room if you go into it, or scan it.

Once you locate an enemy, it's usually time for a fight. Small arms have a single dice roll. This is a random number that gives the attack a value, a random attack value. Then another dice roll, another random number, gives to the target a defence of the enemy, a random defence number. Large arms get an additional dice for another random number. The values are compared and the outcome played out.

I have had the commander, highly skilled in hand to hand with a power glove and power sword, roll zero and have a weak enemy roll 2, taking one of their lives. Then things get more annoying. When the computer rolls its turn, it can throw a shed load of things at you at random.

I was half way back, having removed the dreadnought with three marines alive and out of nowhere, a booby trap. It got a high roll and took out all of the team. Absolutely nothing I could do about it. Another attempt and on the way back two Soul Seekers appeared from nowhere because of the random roll by the computer, and killed the last remaining two marines.

And here lies the problem for me.

I could not see any strategy element here. How can you have strategy when the whole game revolves around random numbers. It doesn't matter how you position your marines, how cautious you are or where weapon types are placed in the formation. If soul seekers appears and, because of the random number generator, takes out a team member, then where is the strategy?

OK... lets take a step back and evaluate the game itself.

The graphics are nice, and can be swapped into a 3D view. This is also used to show the outcomes of combat and does look really nice. Sound is minimal, with footsteps, weapons fire and explosions.
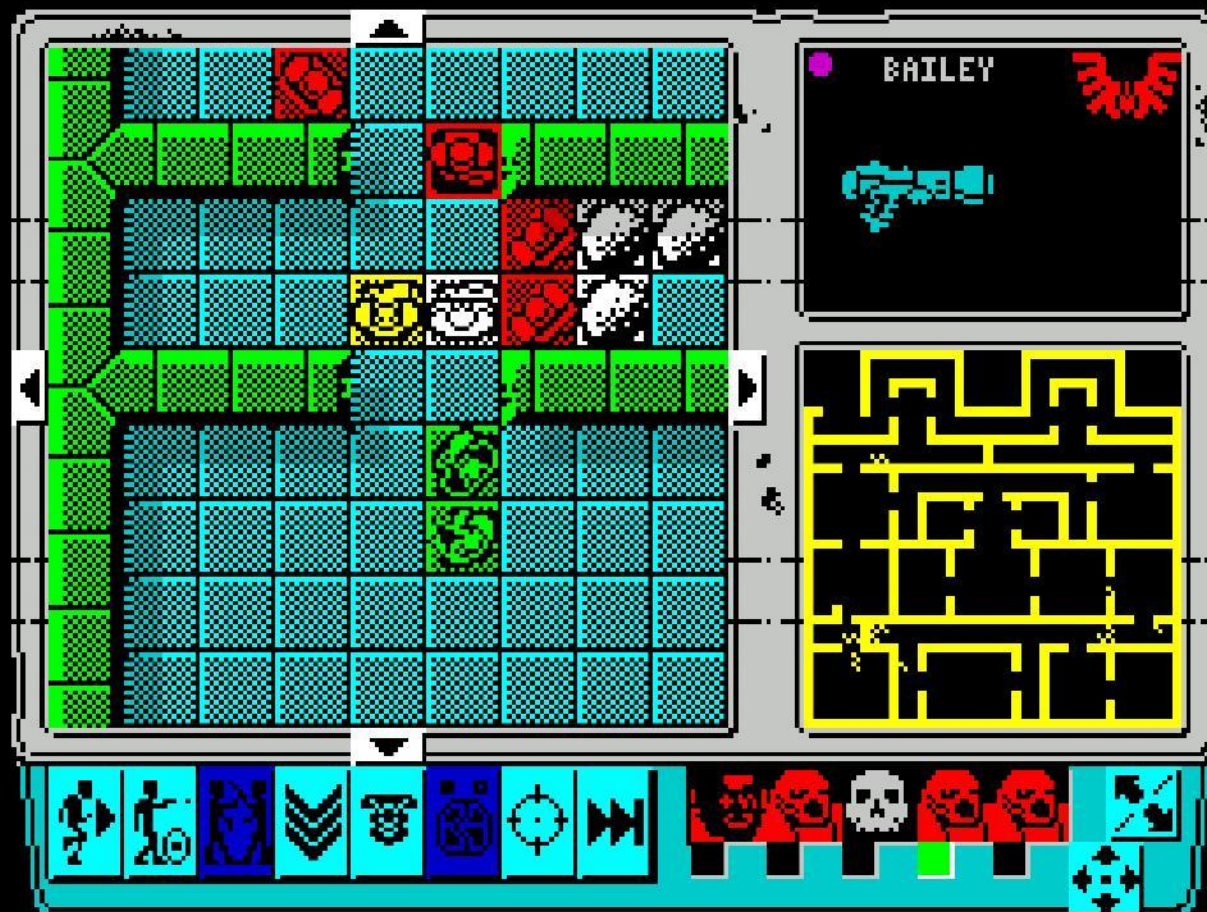
Control is good, although the scroll arrows, to move the view, sometimes were hard to hit and I sent a marine to the wrong place a few times. I found it much easier to play using a mouse. The hacked version to allow the Kempston mouse can be found on the Velesoft website.

I played this game so many times. I also tried the Amiga version out, and it's the same mechanics, and it destroyed my team unfairly because of the random numbers. Why isn't there a model to allow each kill to add experience, so building up you team? Why aren't there weapon upgrades – maybe there is in later levels, but I just couldn't get there, because of random numbers.

I was getting addicted. I had to complete the first level, but then the realisation hit me. If I did finish, it was because of random numbers and not my skill or strategy. When recording the video for the show, for the first time I managed to complete the first level. By this point though, the excitement had gone. I knew at any time I could get killed by a random booby trap and it was just a case of rolling dice, seeing the number, shrugging, and continuing.

I was hooked on this, I really was.

I kept playing again and again, over a period of about 14 days, with sometimes four or five attempts per day. But I always felt the game was just pretty graphics and good story wrapped around a random number generator. This dictated the game, it dictated the outcome, and no matter how you approached the game, it was random numbers that were in control.

The only strategy I could see, was standing close to a door and using it to crush enemies, but that's hardly a master plan is it? Even trying that can go wrong because the computer can throw a booby trap at you, because of the random numbers and take out two of your team: madness!

A lot of people love this game, and in a way I can see why, I really can. But for me, the sheer randomness takes away from the gameplay.

It's a shame really!
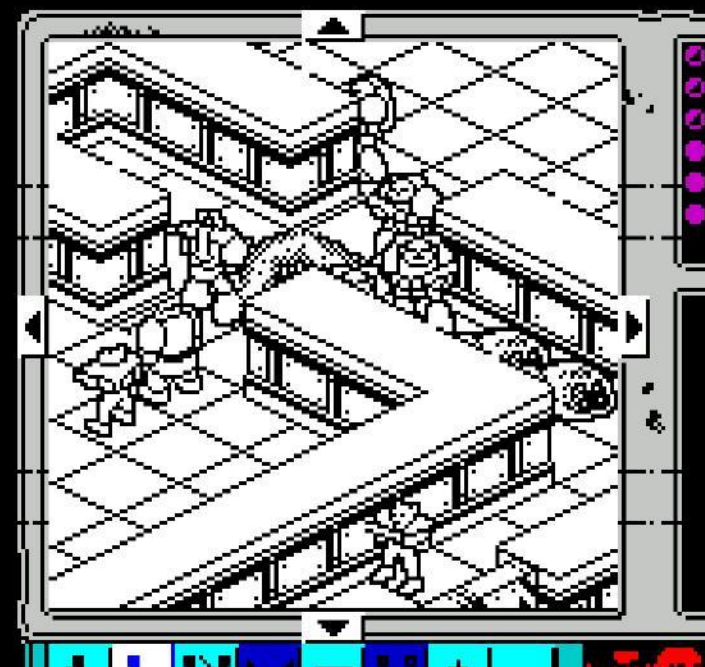
LASERWARP

Mikro-Gen 1983

This is an early game, 1983 to be exact, a time when programmers were just learning about the machine and games were of varying quality. And to be honest, this game certainly shows its age, but it still has a certain charm.

Yes, it's a vertical shooter, like so many others, but at least it isn't an arcade clone, and this game does cram a lot of action on screen at once.

There are the constant firing blue projectiles that can really get in your way if you are not careful. These shoot down diagonally from each of the top corner.

As well as those, there are the aliens to shoot. These vary in both look and movement for each level and these drop bombs. This makes the game interesting and challenging.

If that wasn't enough, there are also indestructible objects flying about and all this makes for a tricky game.

To progress you have to destroy all the aliens, the ones that can actually be shot of course.

As each level arrives, you are told what to expect. and then it's into the action.

The graphics are average for a game of this age, with little or no animation, but they move smoothly enough, especially considering the numbers on screen.

Sound is the typical Mikro-Gen sounds of the early eighties and works well with the game. I like these sounds, and they evoke memories of late night shooting.

Control is good and responsive but I'm not sure this game will suit everyone. I quite enjoy having a quick blast to see how far I can get, but it's not a game I would play for long periods of time.

Connected with this game, is another called "The Game" which looks like a modified version that was released as part of a competition.

Overall this is a mixed game for me. I love the early Mikro-Gen titles, and like to go back and re-live them. This game is a fast shooter, but there are better games out there, even from 1983.

THE GAME

In 1985 a game called "THE GAME" was sent out to local newspapers for readers to collect. It formed a competition to see who could get the highest score. The winner would then get another game, Battle Of The Planets, free.

The game was missing in action for years, but was found a few years back, and it turns out it was actually a version of Laserwarp by the same authors.

Both games are almost identical, but The Game starts at a higher speed and gives no options to change things like Laserwarp does.

When you die, The Game gives you details about the competition along with a verification code, and obviously Laserwarp doesn't.

The Game is very rare, and as you would expect, demands a massive price when appearing on sites such as eBay.

CP/M UNRAVELLED

GEORGE BECKETT RETURNS WITH A LOOK AT CP/M

In the early days of microcomputers, innovation was prolific, with various manufacturers building systems around different CPUs, screen configurations, storage, and even keyboard layouts. The diversity of products meant that technology advanced quickly and customer choice was strong. However, for software vendors this diversity presented serious challenges. Each new platform forced software houses to rewrite their key applications, meaning software was expensive and slow to be produced.

In 1976, a computing consultant, named Gary Kildall, formed a company called Intergalactic Digital Research (soon shortened to Digital Research) to sell a software product called CP/M that he had written for controlling an Intellec computer that he used. A key novelty of CP/M was its portability: it could be run on a whole range of microcomputers, provided they fulfilled a few basic requirements. CP/M proved very popular in the fledgling hobbyist computing market, as manufacturers were able to licence CP/M rather than write their own control software.

Fuelled by this interest, Gary expanded CP/M to include some basic development tools, such as an assembler and editor, along with some file-management tools, making CP/M into a self-contained operating system. By the late 1970s, it was the dominant operating system for a whole range of microcomputers, and this dominance led to the emergence of a

strong software scene, with a wide range of tools, games, and full-blown applications being published for CP/M.

CP/M was designed to run on disk-based microcomputers with an Intel 8080 microprocessor. CP/M could equally well run on the Zilog Z80 processor, since the Z80 was binary compatible with the 8080, and could run software written for the 8080 without any modifications.
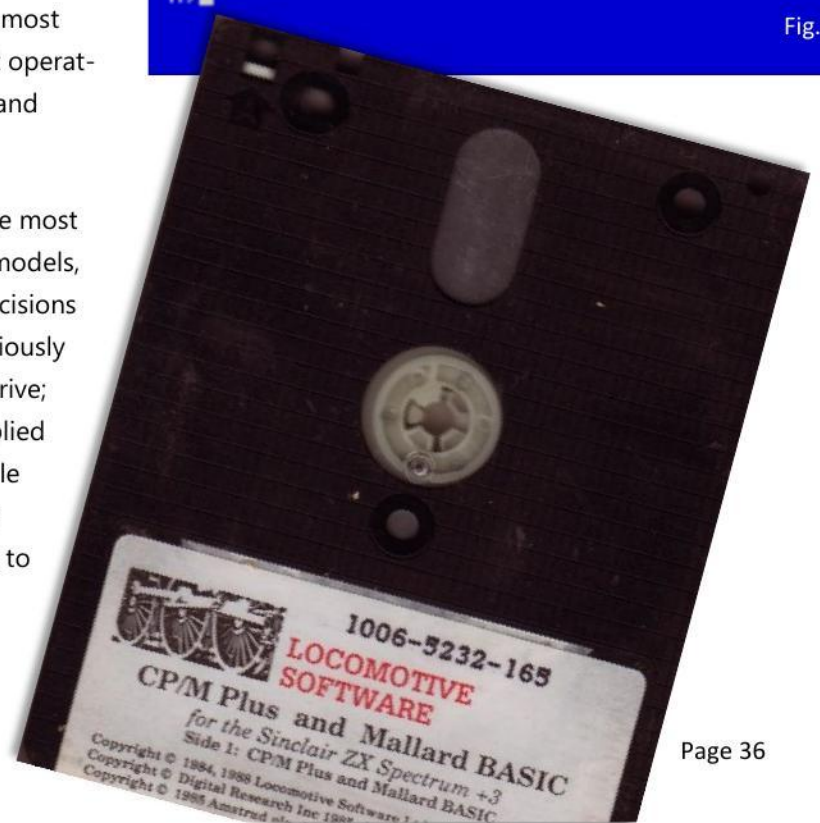
The UK home computing market of the 1980s was relatively slow to take up CP/M, in part because most early-80s machines did not include a standard disk drive. Both the Commodore 64 and BBC Micro could run CP/M software, via an add-on interface (which effectively added a Z80 as a second processor). However, Amstrad were the company that most embraced CP/M, making it the default operating system for their (disk-based) CPC and PCW ranges of micros.

For the ZX Spectrum +3, which was the most Amstrad-influenced of the Spectrum models, they made a number of key design decisions that enabled CP/M support. Most obviously they added a CP/M-compatible disk drive; and ensured the built-in +3DOS complied with the CP/M standard for disk and file management. More subtly, they made changes to the memory-management to allow the computer to run CP/M.

It did not take long for CP/M to be ported to the ZX Spectrum +3, by a small company called Locomotive Software, who had a strong relationship with Amstrad, having developed software for their CPC range of computers as


```
CP/M Plus  Locomotive Software Ltd

v 1.0, 61K TPA, 2 disc drives

RAMDISC v1.0 [size=12K] installed

A>SETDEF *,C:[ORDER=(SUB,COM)]

Drive Search Path:
1st Drive              - Default
2nd Drive              - C:

Search Order           - SUB, COM

A>PIP
CP/M 3 PIP VERSION 3.0
*C:=PIP.COM
*C:=SET24X80.COM
*

A>
```

Fig.1

1006-5232-165
LOCOMOTIVE SOFTWARE
CP/M Plus and Mallard BASIC
for the Sinclair ZX Spectrum +3
Side 1: CP/M Plus and Mallard BASIC
Copyright © 1984, 1988 Locomotive Software
Copyright © Digital Research Software and Mallard BASIC
Copyright © 1985 Amstrad plc 1986

well as for the extra ROMs in the ZX Spectrum +3 and +2A. Locomotive released CP/M Version 3.0 - more commonly known as CP/M Plus - for the +3 in 1988. The software cost £29.99 and for that you got a full CP/M Plus implementation and a powerful version of BASIC, called Mallard BASIC, crammed onto the two sides of a single 3-inch diskette. You also got a 300-page printed manual, covering the operating system in detail and providing an introduction to BASIC (for a further £10, you could buy a more detailed Mallard BASIC user guide).

Starting up CP/M on the +3 was straightforward. You simply inserted Side A of the diskette and selected "Loader" from the +3's opening menu. After a few seconds, you were presented with a screen something similar to Figure 1, and a prompt ready to accept your first CP/M command.

Unlike the standard Spectrum +3 monitor program - which is held in ROM and thus loads instantly - CP/M takes a few seconds to set up, as the operating system's kernel is loaded into memory. You will no doubt be familiar with the short (or long) wait, when you turn on a PC, and it boots into Windows, MacOS, or whatever. Well, that is effectively what happens when you start CP/M: the boot process pages out the usual Sinclair ROMS and the screen memory, giving 64kb of RAM for CP/M and any applications. As you may spot from the screenshot in Figure 1, at start-up there is around 61kb for applications (the acronym TPA stands for Transient Program Area, which is where software goes).

Using CP/M is very different to the usual Spectrum experience. It provides a shell through which you can manipulate files, configure peripherals, and run applications. If you have ever ventured into the Command Prompt on Windows or opened a terminal on MacOS/ Linux, then you will be familiar with this kind of interface. In fact, many of the commands are similar to those found in the Windows Command Prompt, reflecting the influence that CP/M has had on the PC: disk drives are referred to as A:, B:, etc.; to view the content of a disk, you use the DIR command; to view the contents of a file, you use TYPE, and so on.

When running CP/M, some of the +3's features are not available (or, at least, not supported):

- There is no tape interface.
- There is no support for the AY-3-8912 sound chip.
- There is no hi-res graphics support.

However, most others features are: printing (parallel and serial) is supported; the external disk drive (B:) is supported; and a modem can be connected to the Expansion port.

Since CP/M is a disk-based system, it often needs to read a program from the system diskette to complete a command. Because of this, it is common to use CP/M on a two-disk systems, in which the system/ application diskette is kept in drive A: and a user's data is read from/ written to a disk in drive B:. Since most Spectrum owners do not own a second drive, Locomotive CP/M allows you to map both A: and B: to the internal drive, just like +3DOS does - for example, prompting you to "insert diskette for B: into drive" when you need to swap diskettes. Despite this, running CP/M on a single-drive system will involve a fair amount of diskette shuffling, so most serious users would opt to install a second drive.

In common with most of its contemporaries, Locomotive's CP/M only supports text-based applications. CP/M systems generally had 80-column text displays and, as a result, many applications assumed this. Given the 256 pixels available on a row of the Spectrum's display, it was never going to be possible to have 80 columns on screen. Locomotive compromised by creating a 5-pixel-wide font, which allowed 51 columns of reasonably legible text. Then, to support 80-column applications, Locomotive CP/M includes a split-screen, 80-column display mode in which either the left-most or right-most 51 characters are displayed at one time. In 80-column mode, the display driver tries to work out which view of the screen is most useful: if your cursor is in the left part of the screen, it will display the left-most 51 columns, and similarly, if in the right part of the screen it will display the right-most 51 columns. Also, you can manually switch between views by pressing Control-Enter (where the Extended Mode button is used as Control). Even so, some applications are a little clumsy to use, with the split-screen mode. In Figure 2, you can see the effect of split-screen mode on one of CP/M's


Fig.2

killer applications, the word processor Wordstar. Writing long documents would be tiring on such a setup.

The rights to Locomotive's CP/M Plus are owned by SD Microsystems, at the time of writing, and you can buy a licence along with a diskette image for £5 from Locoscript Online [https://locoscript-software.square.site/], where you can also buy other Locomotive software (mostly for the Amstrad PCW), computer manuals, and various bits of retro kit.

While the CP/M system disk is very important, it is not very exciting. If you want to start appreciating the potential of CP/M, then you need some software. To get you started, Locomotive have included an application, called Mallard BASIC, along with the operating system. To run Mallard BASIC, you simply enter the command 'BASIC' (with Side A of the system diskette logged in the active drive). If you have followed my 'Mind Your Language' series, you may recall that we looked at Mallard BASIC in Issue 17 (pp. 24 - 25). It is a powerful version of BASIC, which is well suited to serious applications, such as for a small business or a student. While Mallard BASIC does not support the graphics and sound capabilities of the Spectrum, it does provide a powerful and fast interpreter, which is (reasonably) compatible
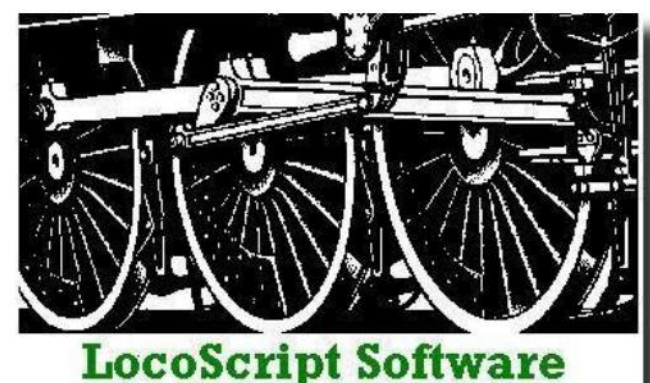
LocoScript Software

CP/M Unravelled

with other 1980's implementations such as Microsoft GW-BASIC. A review of Mallard BASIC in Sinclair User magazine (Issue 10.88, pp. 100) compared the speed of Mallard BASIC to Sinclair BASIC, observing up to 5× speed-up on a range of benchmarks for Mallard.

Running CP/M on the ZX Spectrum, in the 1980s, gave you the opportunity to run a whole range of new software, everything from public-domain programs through to expensive business applications. Given that the ZX Spectrum is famous for the extensive catalogue of software available for it, one might reasonably ask whether that is particularly significant. However, CP/M supported different kinds of software to the ZX Spectrum. Whereas the latter was best known for games, CP/M was the PC of its day, for word processing, spreadsheets, programming, etc. Further, given that CP/M is a disk system, disk support in CP/M applications is comprehensive, whereas it often felt as if ZX Spectrum +3 titles were mediocre ports of applications and games really written for a tape interface.

In the 1980s, the easiest way to get CP/M software for the +3 was to tap into the Amstrad CPC and PCW markets. Much of the software for those systems would run, with a little reconfiguration, on the Spectrum. Also, since the CPC and PCW systems used the same 3-inch diskettes, it was straightforward to get suitable media.

Today, anyone interested in CP/M should turn to the Internet, where enthusiasts have captured a respectable archive of software. Sites such as www.cpm.z80.de, www.z80.eu and www.retroarchive.org are good places to start. Most CP/M software, built for the Z80/ Intel 8080, should run on the ZX Spectrum. CP/M software archives do not usually provided disk images so, to get the software onto a DSK image for an emulator, you need an application such as CPCDiskXP [http://www.cpcmania.com/cpcdiskxp/cpcdiskxp.htm].

To run properly on a particular version of CP/M, an application first has to be installed - effectively you make up a new diskette with the application and any required supporting tools, plus set up the display and keyboard configuration (usually referred to as a terminal) and any particular customisation you need.

The method of configuring software varies from application to application. Some software includes a separate installation tool that you run once, when you first get the application; some software may include a text configuration file that you need to edit; in some cases, you may need to do a bit of programming (as we will see later).

Installing the software helps specify things such as the screen type and size (Zenith, with 51×24 characters, for the +3), the keyboard layout (not all keyboards had cursors keys, caps lock keys, etc., so software did not assume this by default), and language support (CP/M lets you write in French, German, or even more exotic languages, on your Spectrum!).

Hopefully this has wetted your appetite to try out some classic 1980s software and, if so, a good place to start is to try out some of the office applications that were available for CP/M, such as the Wordstar word processor. Wordstar is a particularly good starting point as a retro-computing fan, named Cristian Secară, has already installed Wordstar 3.0 for CP/M on the ZX Spectrum [https://www.secarica.ro/index.php/en/zx-zone/plus3-software/cpm-plus-for-plus3-related-software], including adding support for the +3's cursor keys and defining a default parallel-printer driver. Wordstar is a powerful application, with lots of functionality. It comes from a time when applications cost hundreds of dollars and came with instruction guides the size of phone directories. To get to grips with it, you will need to spend some time with the User Guide, which is reasonably easy to find on the Internet plus, as hinted above, you will need to use 80-column mode (selected by entering the command "SET24X80" at the CP/M prompt).

The complement to Wordstar is Supercalc, which is the Microsoft Excel of its time. I did not find a preconfigured version of Supercalc, though the software is usually accompanied by an installation tool called INSTALL.COM, to help set up the terminal properly. A compatible Supercalc Version 1.12 is available from www.retroarchive.com/cpm. To run this, you should first run the INSTALL utility, specify a Zenith-compatible terminal and then set the columns-per-screen to 51, to get a reasonable

Supercalc Version 1.12 Example Spreadsheet.   Fig.3

display. You may also want to adjust the border character to something such as code 3A in hex (which is the ASCII code for a colon character ':'), as the default as shipped '¦' is not a recognised character on Locomotive CP/M Plus. Again, there is a long and detailed user guide to accompany Supercalc, which you need to at least skim over the first few sections of if you want to try using the software. Given Supercalc is nearly 40 years old, you may be surprised at how much functionality it includes - all packed into a mere 26 kilobytes!

Office applications are an interesting amusement, though the novelty is likely to wear off soon enough, and if you are going to justify the effort of setting up CP/M, then you need something a bit more engaging. One option is to dip into the range of programming languages that are available. In the "Mind Your Language" series, featured in earlier Spectrum Show Magazine issues, we have looked at some of these that were particularly au fait in the 1980s: Mallard BASIC, Z80 FORTH, and E-Prolog. These can all be set up to run in CP/M Plus on the ZX Spectrum with little or no effort. However, one can also find more conventional languages such as Turbo Pascal, COBOL, and Z80 assembly language. In fact, there is a CP/M Plus version of HiSoft's powerful DevPac assembler, available from Cristian Secară's website, which runs very well on the ZX Spectrum +3 (though you will need to learn how to write machine code that can interface with the CP/M Plus kernel).

Finally, there are games, though typically not of the calibre of the usual Spectrum fair. Given the lack of graphics support, games are limited to a
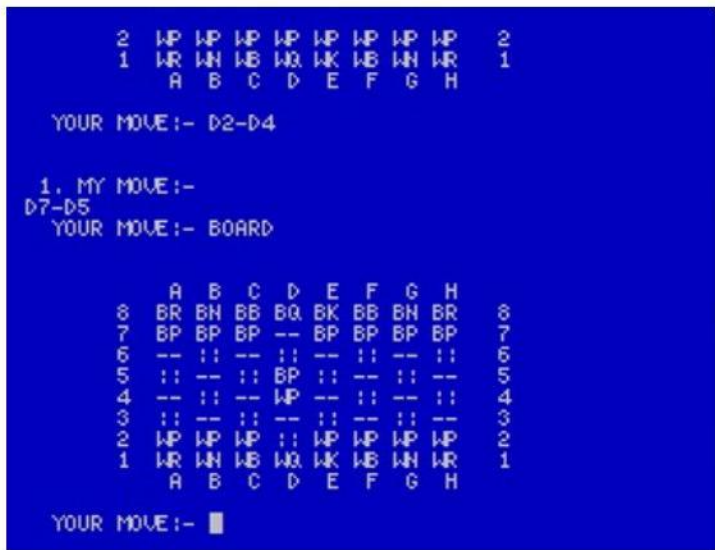
Fig 4: A simple though challenging Chess game.

text-only interface. There are quite a few puzzle games, including a challenging if slightly primitive version of Chess (see Figure 4) available on the CP/M Utilities and Games disk from Locoscript Online.

One area where CP/M stands out is in text adventures. GilSoft's Professional Adventure Writer (PAW, for short) was available for CP/M (in fact the +3 disk version of PAW on the WorldOfSpectrum website is, in fact, the CP/M version) and this opened up a door to many good adventure games. Best of all, CP/M is able to run the very highly regarded Infocom games, which were otherwise very difficult to play on the ZX Spectrum (see The Spectrum Show, Episode 63, for information on a modern-day way to get these games onto a ZX Spectrum). Running CP/M Plus, and with a little work to install the Z-machine interpreter for the +3 terminal, you can play a whole range of Infocom games as they were intended (Figure 5).

You first need a copy of the Infocom game interpreter, which you can get from the Internet -

for example, from http://www.z80.eu/adventures.html (where you can also download a number of early Infocom adventures). Each game comes with its own interpreter. For example, the Zip file for Zork 1 contains two files: a copy of the interpreter 'ZORK1.COM' and a game data file 'ZORK1.DAT'. However, the interpreter is a generic one that has simply been hard-coded to load a data file called 'ZORK1.DAT'.

You could run the game as is though, because it has not been installed for the +3, it would not work perfectly. First, it would be configure for an 80-column display, so you would need to use 80-column mode. Also, some of the terminal escape sequences, such a clear screen and inverse video, would not be correct, so the display would look a bit confused.

To get the most out of the games, it is worthwhile to set up the Z Machine properly. Infocom released a patch file, written in Intel 8080 machine code, to do this. A copy of the file can be downloaded from the blog post at http://www.vcfed.org/forum/showthread.php?57362-Lost-Treasures-of-Infocom-on-CP-M. It is best to edit this file on a modern PC and then copy it onto the adventure-game disk image using CPCdiskXP, or something similar, to be assembled and run.

Basic instructions are included in the patch file, and I have found the following parameter values will produce a +3-compatible version (fig6)

Having edited the patch file and added it to the adventure diskette, boot up CP/M and insert the adventure diskette in drive B:

and put Side

2 of the CP/M system diskette into drive A:. Then, enter the following sequence of commands to assemble and prepare the patch file (replace 'ZORKINST' with whatever you have called your patch file):

B:
A:MAC ZORKINST.ASM
A:HEXCOM ZORKINST

This should produce an executable version of the patch file, called ZORKINST.COM, along with some intermediate files. The patch file is written in 8080 assembly language (rather than Z80 assembly language), as this is what the Intel macro assembler MAC is expecting. However, because the Z80 is binary compatible with the 8080, it can run the generated code without any problems. MAC will produce a binary file, similar to what you would load into Sinclair BASIC with a LOAD "filename" CODE command. However, for CP/M, the binary file needs to have a header, so that it can be run from the shell. This is the purpose of the HEXCOM command.

To complete the process, you then simply run the executable to patch the game file and, assuming there are no errors, you are ready to enjoy some great adventure games.

CP/M turns your ZX Spectrum into something quite different, and lets you experiment with some distinctive and landmark applications. It may not give you the gaming experience you are used to. However, it is worthwhile to stand back and appreciate that you are running PC-like software on a tiny, 8-bit computer with just 128 kilobytes of RAM!

Fig 5: The Infocom classic 'Stationfall' on the +3.

```
CPMCPL: DB 51          ; Characters/line (132 maximum)

CPMLPP: DB 23          ; Lines/screen (NOT including status line)

CPMFN:  DB 'ZORK1', 20H, 20H, 20H

                       ; Filename of Z machine (w/o extension)

                       ; Pad to eight characters with spaces

TINIT:  DB 06, 1BH, 45H, 1BH, 59H, 38H, 20H

                       ; Initialise terminal screen

TRESET: DB 0           ; Reset terminal at end of game

BLINE:  DB 02, 1BH, 48H ; Turn on inverse-video mode

ELINE:  DB 04, 1BH, 59H, 38H, 20H

                       ; Turn off inverse-video mode

PINIT:  DB 0
```

Fig.6

GRUMPY SANTA

Paul Jenkinson 2017

Santa is grumpy. All he wants to do is sit down, rest and get drunk. However, Mrs. Clause has other ideas. She needs him to deliver presents for all the little children. The problem is, the evil snowmen and the nasty elves have stolen them.

Santa has to go and get them back so that Mrs. Clause will be happy and he can finally enjoy the festive season and get drunk.

Grumpy Santa was a challenge I set myself in 2017, to write a game in two days. I didn't manage it, but this game was the result and it took three.

The game is written using Arcade Games Designer, and is a standard platform variant. You have to guide Santa around each screen collecting presents. As each present is collected, larger presents are built up, until all have been collected.

When all the present on each screen have been collected, a portal will appear allowing Santa to progress.

The game uses AGD's STAR command to create an effect like snow, which looks really nice, and the difficulty is about right allowing a pleasant experience.

The screens vary, featuring spooky castles, snowy wastelands, Evil Snowmen and Christmas trees.

The graphics are well drawn and animate well and although there is no music (I only had 3 days!) the sound is used well for various things like collecting or moving on.

A nice little festive game to warm your cockles.

CHRISTMAS CRAPMAS!

Andrew Gillen 2017

It's another festive game, and this time you have to guide Santa around the screen collecting presents. Each screen is packed with roaming enemies, which Santa has to avoid.

The real difference in this game is that Santa is continually moving, so you can't just move around as you would normally. Once you set off in a direction, you will continue until either you hit a wall or an enemy. This makes the game very challenging.

It was written using Classic Game Designer and uses 8 x 8 character blocks for the graphics. This make it look like, as the name suggests, a classic old school title.

There is little sound unless you die, and the game is frantic, hectic and challenging. Santa can sometimes move too fast, so you can't really line up the presents to collect. It would have been better (in my opinion) to guide the player in with a less packed screen.

The amount of enemies and the speed of Santa certainly make this game tricky to complete.

If you die, any presents you had previously collected are put back, meaning you have to start again, which is a bit mean for Christmas.

A sadistic game, and one to look at if you want a challenge and have the reflexes of a ninja.

FESTIVE REFLECTIONS

For many Spectrum users of a certain age, the festive season was one of great excitement. There was a slowly increasing thrill as the magazines were flooded with adverts for the latest games, and newly released games were getting pages of reviews.

Most magazines had complete sections about the ideal Christmas present for the Spectrum owning youth, and went on to list a myriad of wonderful and expensive add-ons that you could often only dream about.

Plans were made to spend money you were expecting to get from relatives, and there was always the difficult choice given three games you really wanted, and only hoping to get enough funds for two. Would your parents give you the extra few quid? Would you get more than expected from granny? Could you sell that awful soap-on-a-rope you always get from Auntie Madge to make up the difference?

Then of course, there was the battle for the television. Your parents would maybe allow you a few hours to set up your beloved Speccy, at the same time worrying if they could ever re-tune it back for EastEnders. It seemed just as you were getting good at a game, and obtaining your best ever score, the call came to switch it off and let Grandad watch something.

If you were lucky to have your own portable tele-

vision in your bedroom, things were much simpler, but still fraught. While trying to blast aliens in Galaxians or get objects for the cauldron in Knight Lore, you would be constantly harassed to come down and spend time with the family.

Who cared about the Queen's speech, who cared about Coronation Street, who cared about the turkey or watching elderly relatives fall asleep? You had been up early, got your presents and now you just wanted to be alone with them. After all, that's why you got them right?

As the years went on, the excitement grew less, or moved to other computers or consoles. Families allowed the children and teenagers to have their own space, and you grew up. The over-hype, the commercialisation and the market-change all came together to make the season less attractive. The magic slowly vanished from our lives.

Looking back though it was the best time to own a Spectrum in my opinion. The early eighties were packed with hundreds of small game companies pumping out thousands of independent games. Magazine racks packed with loads of different magazines and excitement amongst your Speccy owning friends. Even just thinking about it gives me a nice warm feeling, just like the old Ready Brek porridge advert on telly (I did say you had to be of a certain age!)
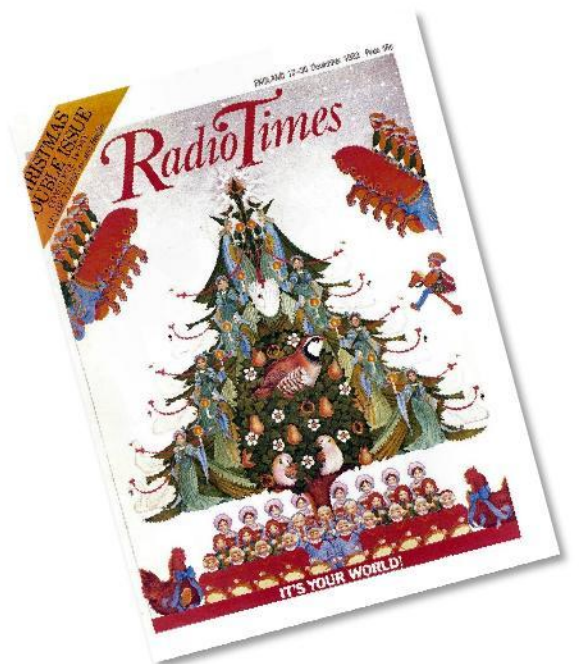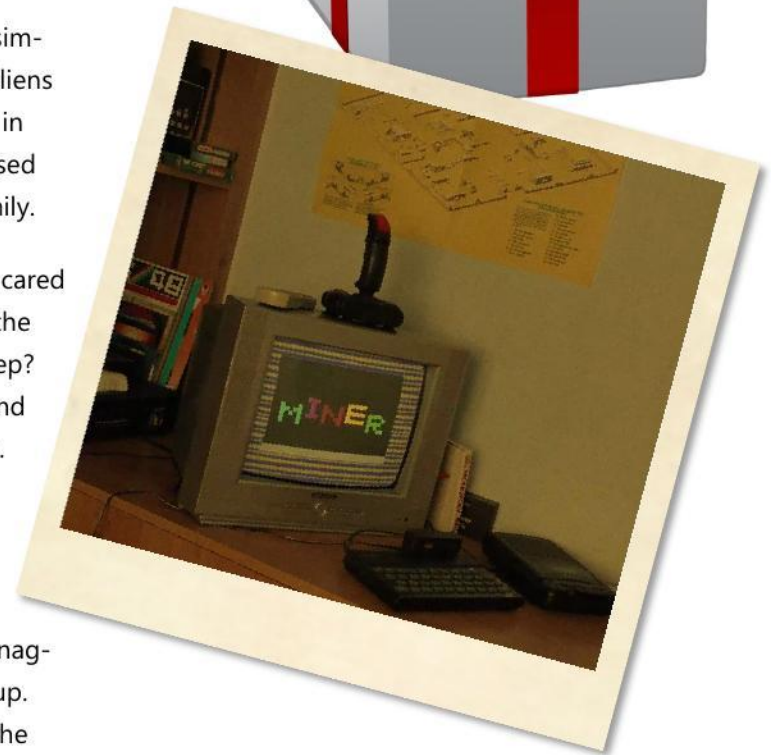
Sinclairvoyance *Re-Visited*
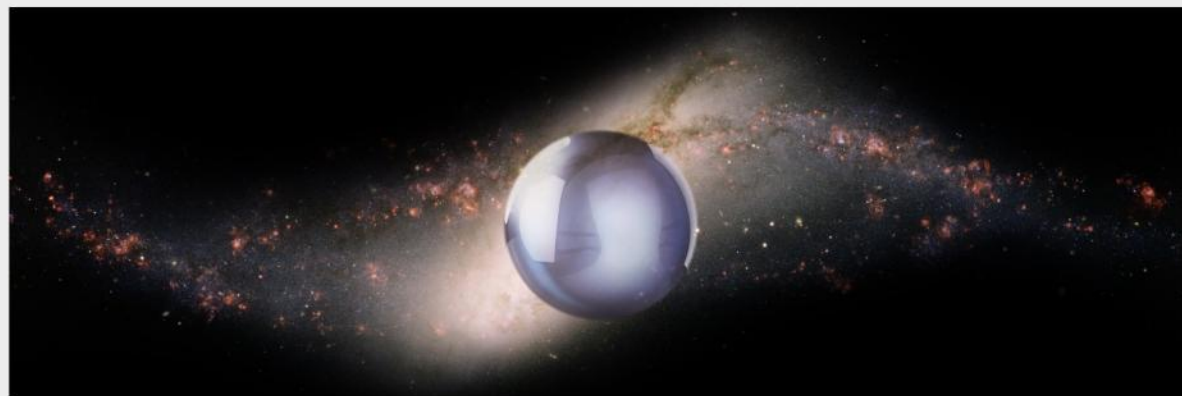
In Sinclair User magazine they had a column called Sinclairvoyence that tried to guess what may happen based on, well, I've no idea really. Sometimes I'm sure they just made it up.

They were often insightful, mostly interesting, and usually skipped over by readers looking for game reviews or tips.

I'm going to reproduce the December 1983 one, slightly paraphrased and shortened, but you'll get the idea. It was written at a time Sinclair were leading the way, but wanted more, in particular the education market.

Are you sitting comfortably, then I'll begin...

-=-

In little more than 18 months, the home computer has grown from an obscure hobby, sparked by the appearance of Sir Clive's revolutionary inexpensive computers, to a multi-million pound business that continues to grow showing no signs of stopping.

This Christmas you can walk into any number of high street stores, from WH Smith to Woolworths and buy a ZX81 or Spectrum as easily as buying aftershave.

Nor does the typecast computer user have to write their own games and travel miles to meet and swap with other like-minded individuals. These same shops are also selling an ever expanding range of professional titles and computer magazines.

It is estimated that by the end of the year there will be one million computers in the nation's living rooms and schools.

In spite of competition from the likes of Oric, Commodore and soon the Acorn machines, the Spectrum is holding its own and still leading the pack with 75,000 units sold by mail order already, and retailers anticipating sales of over 200,000.

The long awaited Microdrive is expected to give Sinclair sales a boost too, once the now familiar delays are sorted out. More than a month after its appearance, the Microdrive is still being sold via mail-order to people who bought their machines that way, and Sinclair admit it could be several months before they clear the backlog.

The Microdrive holds no guarantees of being successful and the £5 cartridge price is a hefty price hike from cassettes.

Sinclair, not wanting to remain stationary, are also pushing into the European markets, being beaten there already by the likes of Oric. The different in the TV signal and the Spectrum's fixed output of RF, could cause issues, and an adaptor is currently been sold with the unit in France.

Interface 2 is yet another add-on from Sinclair, hoping to cash in on the lucrative game market. The price of the ROM cartridges though, do look like holding this back.

Software houses are undergoing rapid change too. Some smaller companies are falling by the wayside, others are being taken over by larger publishers. Melbourne House and K-Tel are purchasing smaller companies in a bid to survive.

So far the computer is just a small extension to our leisure activities and it is yet to be seen whether it will genuinely change our lives drastically.

Competition can only be a good think in the new world. Games, entertainment and education markets can only improve because of it.

In the meantime, we at Sinclair User wish you all a colourful, action-packed and entertaining Christmas.

TZX DUINO

THE MODERN WAY OF LOADING GAMES AUTHENTICALLY

These devices come in several forms, some just have the bare circuit board, others have full injection moulded cases, and some like this one, come with a 3D printed case. The price of each of these reflects this, so which one you go for will be down to aesthetics and price.

Imagine a digital audio player, something like an MP3 player or even a smart phone (yes, I'll get to those later). Well the ZX Duino is a digital tape player. It replaces those old analogue devices with this neat little box.

My version is 7cm by 6cm and 1.5cm deep, It has an SD card slot, five buttons, two audio outputs, a mini USB socket for power and a really clear LCD screen.

It is designed to be used in the same way a real tape player would be, in that it allows loading of software in real time. It does not flash load games like the DIVide devices; this loads things the authentic (slow) way.

After copying some TAP or TZX files onto the SD card, it is inserted into the unit and once all the audio leads are connected (like a tape player), you are ready to go.

Games can be stored in folders and using the buttons you just navigate to the game you want to load. From this point on it is just the same as you would expect from a normal tape player. You type LOAD"" and press the PLAY button.

There are some major differences though, compared to an analogue device. There is no volume to mess about with, no tone to tweak, no tape heads to adjust, no wow and flutter - it just loads.

Well, it usually just loads. Some games had problems, and that could be down to the TZX file or some special loader used. For example Ant Attack had problems for me. The TZX file I have didn't work, so I had to grab another version from Spectrum Computing.

Most games though worked just fine.

Sadly – you can't save data back to it like some other storage devices, which is a shame really.

So, how does this differ from the smart phone apps that allow loading of MP3? Well, not very much, other than it's smaller, can always be plugged in and sat next to your Spectrum with your entire collection, ready to load your favourite game, and I would say easier to use.

I like this device. It's small and works really well, especially if you want to load games as they were meant to be loaded. It also makes using peripherals much easier, as many of them don't like modern DIVide interfaces or Smart Cards and some don't even fit either. The only option before this, was to use a real tape player.

This also means you won't wear out the tapes or run the risk of damaging them in a real player, which is something that has happened to me a few times.

Overall then. A neat little device that will load your games authentically, and can easily replace those old analogue tape players.

ZX Renew

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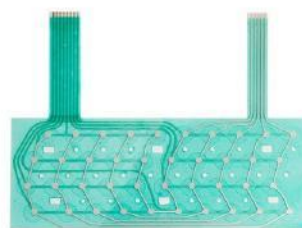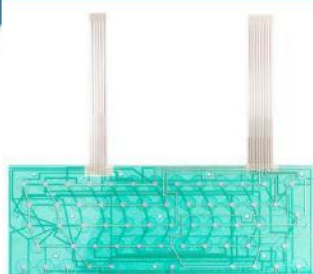
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128K ram

Integrated divMMC double SD card interface.

Two joystick 9 pin ports

RGB out

Composite out

HDMI option - not active at the moment. RGB to HDMI adapter can be used.

Power button

Reset switch button

More colours available for cases, mats and faceplates

GRUMPY OGRE'S

Adventure Page

```
You are in a debris room filled
with stuff washed in from the
surface. A low wide passage with
cobbles becomes plugged with mud
and debris here ,but an awkward
canyon leads upward and west . A
note on the wall says 'Magic
word XYZY'.

About you can be seen

A three foot black rod with a
rusty star on the end
```

Welcome back to strange places where your mind wanders freely and your brain shifts into a higher gear.

When is an adventure game not an adventure game?

What I mean is, at what point during the evolution of adventures can you stop classing them as adventures.

Am I making myself clear at all?

Colossal Cave, the very first adventure, was by default, an adventure game. You were given challenges, you were provided with objects to accomplish this, you were free to move around within the bounds of your progress and the world you were in was set out before you. The challenge in this example was to collect all the treasure and in doing this, solve all of the puzzles. The objects could be collected, dropped or used in any location to either solve a problem or remove the object from your inventory.

Today, this style of game is called interactive fiction, or for us old-school gamers, text adventures. This differentiated them from the next step in the evolution, graphic adventures. These games were the same as the earlier titles but added graphics for the locations. The Hobbit being a prime example of this. There was still the objects, puzzles and challenges.

This has to be still classed as an adventure game. But what about Atic Atac. This great game from Ultimate Play The Game also has object to collect, puzzles to complete and a challenge. You had to have the spanner to stop Frank'n'Stien attacking you, you needed coloured keys to get through the doors and you had to find the three parts of the key to escape. All things needed for an adventure, but this new breed was labelled arcade adventure.

Is Atic Atac an adventure? I would argue not, because of pace. You are forced to do things quickly by the mechanic of the game. You can't stay in one location and ponder over a puzzle. You can't save your progress and come back the next day to try another solution to a puzzle. Now we have added two more elements to judge games by, pace and progress saving.

Let's take a huge jump forward and consider a slightly more modern game, Dungeon Master for the Amiga (or Atari ST). Now this takes all the things from Atic Atac and adds game saves and it also allows you to stop for a while and think about how to keep that portcullis from closing when you move away from the pressure plate. Is Dungeon Master an adventure? Is Dungeon Master an arcade adventure? Some label this style of game as a dungeon romp, or hack & slash game. Me? I'm not really sure how to label it, but it was a fantastic game.

Dungeon Master had no text input, everything was controlled by the mouse. It had puzzles, challenges, objects, saves and a pace that lends itself to adventures, yet something in me (maybe the grog!) says it is not an adventure game.

So what sets it apart? Due to the nature of the game and the limitations of the hardware, you are restricted to mazes. It all takes part in a huge maze with a 3D view. However, it wasn't long before that limit was kicked aside and games like Wizardry on the PC opened up the landscape. It was still block based and still limited, but clever use of graphics made it look like you were in a landscape.

On the Spectrum side there was Bard's Tale. This, in a way, was similar to Dungeon Master, you had to build a party, you could move freely around but the puzzle element was tucked away and the strategy side of things took a more leading role. You could though, still roam about the landscape.

Talking of landscapes, how would you define Lords Of Midnight? It has an open world, it has objects and it has puzzles. This game though drifts into strategy. This was another branch of the adventure game, and one that introduced yet another element. I would say Lords Of Midnight cannot be classed as a true adventure.

I could move on again to things like World of Warcraft, but I won't! For me, a true adventure, in is most basic form, allows players to move around at their own pace, provides enough hints and objects to keep them guessing, provides challenges that are logical and allow them to leave the

game and come back hours, days, weeks or months later and pick up where they left off. In a way it is a long procession of challenges with an end goal to aim for that can be played at the players own speed. Fighting could be included, but not be a major element, the same with strategy.

Of course, you will all have your own opinions on this subject.

Do I Like Modern Games?

Do I like any modern games I hear you scream, yes I do.

I am a huge fan of the Diablo series, and enjoyed Dungeon Siege when it would work on my hardware. I am hoping to find time to have a go at the modern point and click games too, but there is grog to drink and puzzles to solve.

FESTIVE TYPE-INS

HO! HO! HO!

The early days of the Spectrum saw parents wondering what all the fuss was about, and even though they may have bought a few cheap games for their offspring at Christmas, these were soon played to death over the holidays.

What was a lad to do?

Type in his own of course...

TITLE: Xmas Eve
MAGAZINE: Computer Gamer
YEAR: 1987

You play Santa, flying above a small town with his sleigh. In each screen you have to deliver a set number of presents to the town, but only presents that are delivered to houses with their lights out count. The lights turn on randomly, so you have to be careful.

You sleigh constantly moves across the screen and the space bar drops the present. You have to try to get the present down the small chimneys to score points.

The game is written mainly in BASIC but with some machine code.

Yes, it's a kind of bomber game! Not bad I suppose, and I'm sure we've got much worse to come.
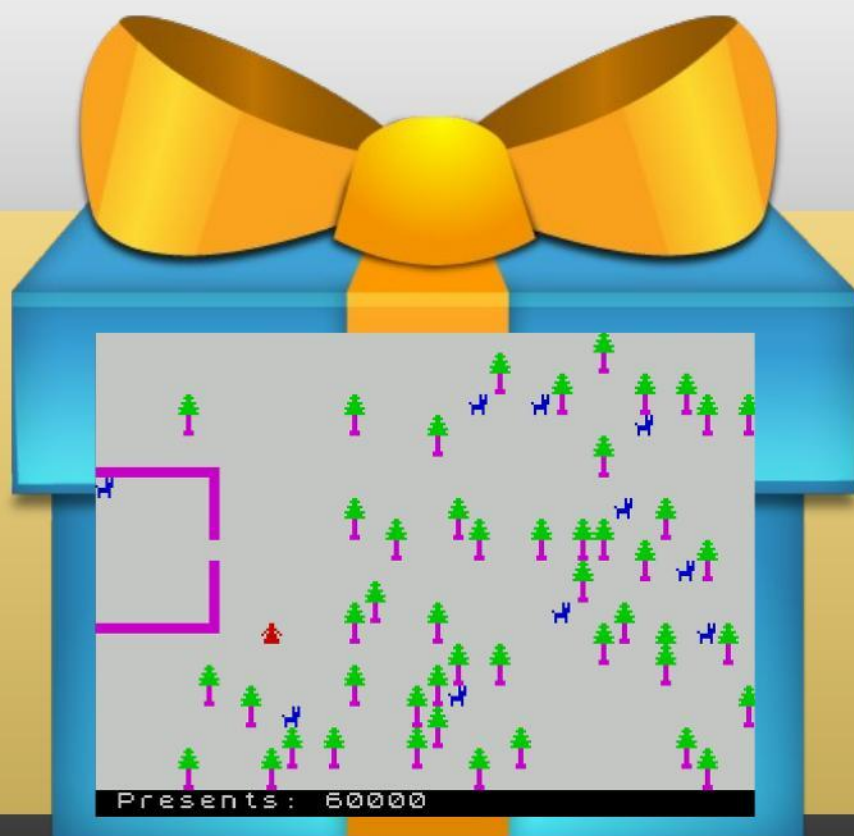
TITLE: Santa's Dilema
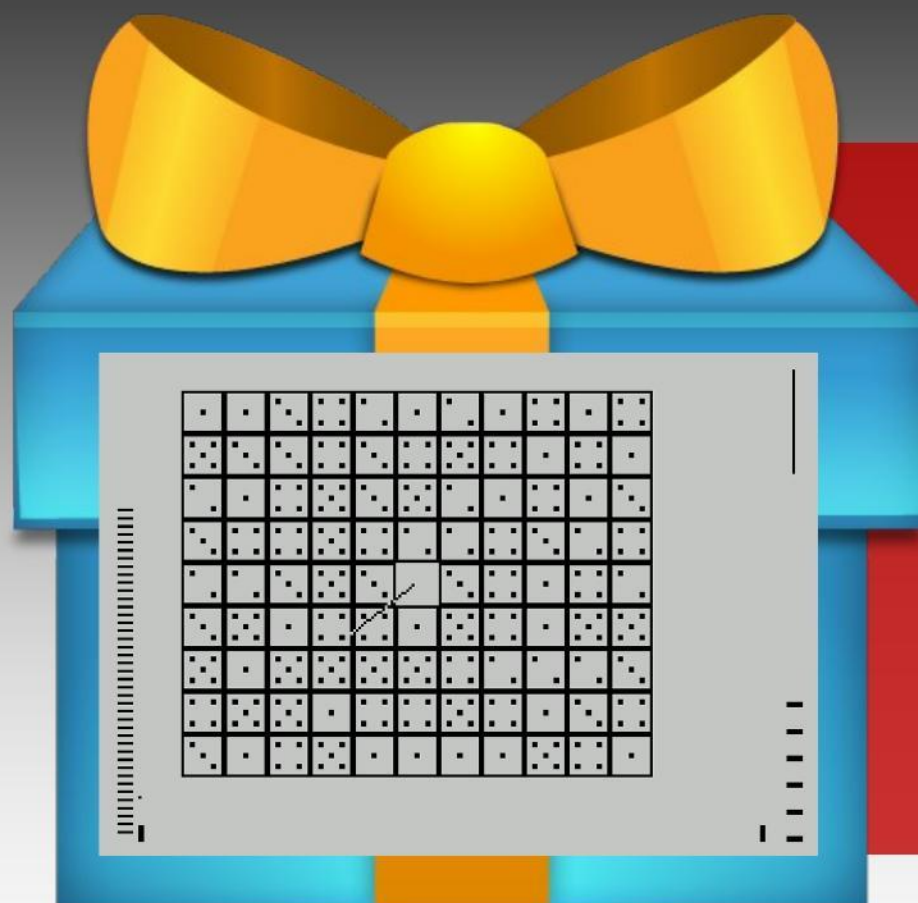MAGAZINE: Home Computing Weekly
YEAR: 1984

The game starts with a lovely tune, and then gets gradually worse.

The idea is you have to herd the escaped reindeer back into the compound so they can pull the sled for Santa.

No doubt you have seen this style of game before and it's just a case of moving around and getting in the right position.

Slow and laborious, but something a little different.

TITLE: Santa's Postal Service
MAGAZINE: Popular Computing Weekly
YEAR: 1983

Oh my god! What the hell is this!

The instructions go on for ever and don't make much sense. Something about plotting the best route for a high score.

The screen takes years to draw and, again, hints at nothing. When the game starts, it ends instantly, and it wasn't until much later I noticed you had to press a key during the screen draw. Doing this sends a line in a direction, and then the game ends.

I could not wait another twenty years for the screen to draw again, and I suggest you never try this one!
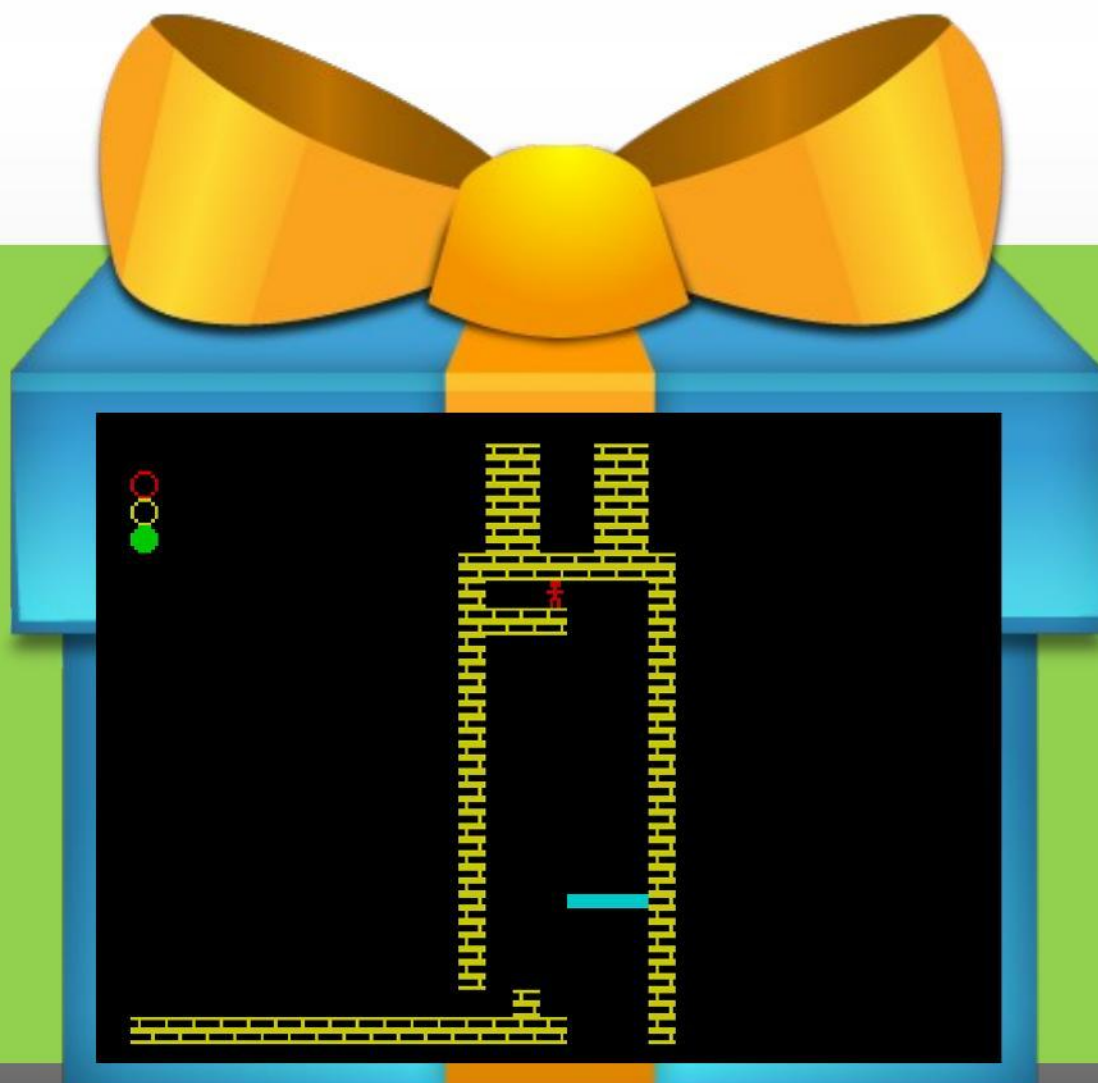
TITLE: Santa's Christmas Nightmare
MAGAZINE: ZX Computing
YEAR: 1985

This is unusual in that it is a multi-part game. At least you do get variations of gameplay and each one is challenging.

First you have to guide Santa down a snow slope, avoiding penguins and snowmen, and this takes the form of a scrolling dodge-em-down.

Then we drop Santa on the roof of the house followed by him navigating down a chimney using a lift.

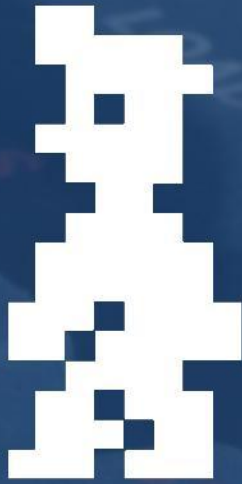Each of the stages is interesting, and this is one of the better festive type-ins I have found.

THE SPECTRUM SHOW

MAGAZINE

NEEDS YOU

Articles   Features   Reviews

Please get in touch if you want to help with this magazine

Poor attempt to make the back page look festive!